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COMPUTERVIEW on Planning for Automation Conference

"The destruction of jobs in the UK has been caused by a failure to invest in new equipment... we must reject the new pessimism... there is no merit in doing things less efficiently... unemployment can be caused by neglecting technology..."

With thoughts such as these, Energy Minister Tony Benn last week provided an optimistic, forceful start to the Planning for Automation conference at the Polytechnic of the South Bank in London.

Unfortunately, by the end of the day the conference had run into the same fog of fear and confusion which has characterised much of the public debate on the "micro revolution".

The optimistic view of the impact of technology was expressed by Tory MP Ian Lloyd,

Micro fears blur the way ahead



Tony Benn... "We must reject the new pessimism."

who said the micro was "the largest, finest gift horse we have ever had a chance to look in the mouth." It would stop people from being forced into boring work, and opened up new areas of opportunity for generating new industries and providing a "reinforcement of intellectual power".

And Benn said that information technology could provide a means of capitalising on "our one natural resource that will never be depleted - human knowledge." Computing, he said, could be of benefit to mankind by providing access to the growth of human knowledge.

However, the potential negative aspects of increased automation struck a generally more responsive chord among the audience of almost 150, as it has done in the public mind.

The dangers of the "micro" revolution were highlighted by Barrie Sherman, research direc-

tor of the white-collar union ASTMS, who said that information technology was unique because it was so all-pervading and would affect a wide range of industries and jobs at the same time. It would cause the elimination of certain jobs and a reduction in the overall demand for workers, particularly unskilled and clerical staff.

His view was backed by speakers from the audience who quoted examples such as the halving of the number of typists employed by Bradford Corporation after the introduction of word processing equipment, to show that people were already losing jobs because of new technology.

Sherman warned that he believed the government and Civil Service were being too complacent about the social impact of automation, as indicated by the Think Tank report.

As the day progressed, the audience divided into two camps, with one side stressing the dangers of high unemployment and the other side the inevitability, in a competitive world, of having to adopt the new technology.

There was some angry heckling of Ian Lloyd for making a "party political speech" which had begun with an emotional attack on the collectivism of the Benn approach, although Benn's personal political speech was received warmly.

And so, stoked by the same simplistic fears and prejudices which the mass media love to ignite, the complex issues surrounding information technology seem to have become inextricably drawn into the same maelstrom of self-interest politics as the country at large.

But - as both Benn and Lloyd from their opposing red and blue corners, pointed out - the problems posed by information technology are only likely to be solved by finding new social and political structures to bring the drive of technology under human control.

Benn said it was all about finding means of spreading and increasing grassroots democratic involvement to take power away from the elite, the

By Malcolm Peltu

large corporations and bureaucracies.

And Lloyd said, "Feedback suggests that our institutions are not in control, and in finding ways to harness technology there is an opportunity for democracy to take a step forward."

The fears of human hardship currently conjured up by the mere mention of the word micro are understandable and must be faced. But merely restating the dangers will only heighten the fear without providing a solution.

But there is a positive way ahead which does not fudge the issues or pretend the solutions are simple. A way which involves local work, education and community groups in understanding the complex, inter-related "macro" issues while identifying ways of implementing local actions aimed at using technology to enhance life.

And if we do not start looking for solutions immediately, there will be a whole "lost generation" of the never-employed (see page 3) who will grow up with anger in their hearts and violence in their fists.

DEC's LSI 11/34

AN LSI version of the top-selling PDP-11/34 mini will be announced by Digital Equipment shortly, say US sources.

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CTL upset over withdrawal of tender for HSE mini network

DESPITE the fact that tenders for a proposed Health and Safety Executive minicomputer network are expected in "the near future" (CW, January 11), independent UK minicomputer manufacturer Computer Technology has reported that it was a front-runner for the project contract following its tender and discussions with the HSE last year.

"The tender requirement was withdrawn at the very last minute," said John Parnell, UK sales manager for CTL, "and this was after we had put in a lot of work. We were involved in the original bid for the pilot scheme, which I believe Nixdorf won, but before that we had many discussions with the HSE."

CTL's involvement with the HSE pre-dated the actual award of the tender by over a year, said Parnell, and everything seemed to be going well, even when a direct question was asked during a project meeting.

"We asked the HSE if CTL came up to its specifications," explained Parnell, "and they replied in the affirmative."

But according to an HSE spokesman, CTL only met the requirements in that "it promised the provision of additional

developments and that because of this, the opportunity to bid was widely available. Most tenders were completely 'factory'."

This was denied by CTL who said, "We could not do the job and within this time limit. This is also the reason why the tender was withdrawn. At the time, we only needed a message telling us the requirement had been altered. We are very upset at the way this was done."

CTL tendered for the job, believed to be worth a £750,000, with eight medium range 8800 microcomputers.

"The HSE kept on making tenders to the tender," Parnell, "and we were in contact with them. The fact that there were two factors about the tender, absolutely had to be ready to do it."

The Central Computer Agency confirmed that tenders did go out last year, but because of revised plans, "new tenders will be near future."

1984 and all that . . .

THIS week's example of the silly things people say later about computers was sent to us by David Davies of Newnham CS.

The aim among computer manufacturers today is to keep equipment for non-professional use and putting the system to work. Hopefully, the next few years will see an enormous range of large air-conditioned computer systems mounted by remote control white coats.

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NEWS IN BRIEF

Progress in ICL dispute

PROGRESS has been made in the dispute between ICL and managers within the company who are unhappy over the terms of relocation expenses after their move from Bracknell to Slough (CW, January 11), following a meeting of the two sides with ACAS last week.

"The company made a statement during the meeting which said that it was prepared to review, without prejudice and by April 15, the terms of our move from Bracknell," said a management spokesman. The managers, while "unsure what the statement actually means" have agreed to accept the delay.

UNILEVER has spun off the microsystems division of its computer operation and established it as a wholly-owned subsidiary, known as USCL. Microsystem, the new company will be chaired by Len Kewley, with Robert Gilkes, who established the division in April 1977, as general manager.

LAUNCH of the Post Office's public packet network has been put back to the first quarter of 1980, but efforts are to be made to launch the network next month and the details of facilities will follow in the spring. The Post Office hopes to offer fully digital leased lines between major cities using the CCITT X21 protocol in 1982 and a full scale digital data network about five years later. This will fill the gap until System X is operating.

A SELF-CONTAINED portable microcomputer system will be introduced in the UK shortly by Computer Auxiliaries of Egham. Called the Durango, it is built around the Intel 8085 microprocessor, is programmed in BASIC, claims to be 95% compatible with Data General Basic, costs about £7,300 and comes from a new Californian company also called Durango and formed by Diablo founder and former president George Comstock.

FOLLOWING the drafting of proposed merger-curbing legislation by the US Justice Department (CW, January 18), Senate Judiciary Committee chairman Senator Edward Kennedy has put forward alternative proposals of which the most potentially restrictive is one to bar any company with \$350 million or more in annual sales or \$200 million of assets acquiring a leading company in another industry having more than 15% of a market totalling more than an annual \$250 million.

NEW versions of Hewlett-Packard's HP1000 range are currently under development, according to US reports. They will use devices manufactured in HP's Silicon-on-Sapphire process, which is being increasingly used by the company in its systems. One model at the low-end of the range is reportedly called the 211C, while at the top end, the 211P should exceed the capability of the top-rated 1000F. The new versions could be introduced during the first half of this year.

NER is offering \$125 million for communications equipment manufacturer Comen, whose IBM-compatible front-end processors are marketed in Europe by TTI (CW, January 18).

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A TABLETOP computer system, with a starting price of £5,625, has been added by Digital Equipment to its Data-system family of small business computers. Called the Datasystem 150, the tabletop machine is configured around an LSI-11 processor and comes with a 512,000 character floppy disc store and a VT100 video terminal.

Software features of the Datasystem 150 include Commercial Transaction System, CTS-300, which offers sequential, indexed sequential and random file access methods, DEC's high level language, Dilog, and Dicom, Datasystem Interactive Communication Access Method, for interactive communications with an IBM 380 or 370 mainframe.

Datasystem 300 configurations, along with the new 150, now feature modular cabinets with the special attraction of colourful silk-screen prints for the end panels and nothing will be more decorative.

The semi-abstract designs were created by the American graphic artist Corita Kent, whose many special projects, according to DEC, have included a 150-foot-high rainbow that adorns a natural gas tank at Doncaster, Massachusetts.



LSI used throughout in the next CDC supercomputer

A SUPERCOMPUTER implemented entirely in LSI technology is the next development planned by Control Data following the introduction of the Cyber 203 supercomputer (CW, January 18). The most important hardware difference between the 203 and the earlier Star 100 supercomputer from Control Data (CW, October 28, 1978) is that the 203 incorporates a conventional - or scalar - computer that is

six times faster than the scalar processor used with the Star 100. The scalar machine is made up of about 2,000 chips, each of which contains 165 custom-designed logic gates.

In its next generation of supercomputers, Control Data plans to use these chips in the vector processor, the machine that can execute many millions of floating-point operations a second. In the 203 the vector processor can execute 160 million a second - 100 Megaflops being the term used by Control Data.

The version of Fortran supplied with the Cyber 203 enables the instruction set of the vector processor hardware to be called directly. Each of these instructions can cause many thousands of calculations to be carried out, 65,000 being the maximum number.

Application areas for the 203 include weather forecasting, aircraft design, oil reservoir simulation and finite element analysis of complex structures.

'Freedom' Bill passes first hurdle

CLEMENT FREUD'S Freedom of Information Bill (CW, January 18) received an unexpected second reading in the Commons last Friday, after a four-hour debate, but its chances of becoming law unchanged are still slim owing to the impending General Election and the possibility of many amendments being put forward by the government. If the Bill is not passed by the time the election is announced, it will be completely lost.

Home Secretary Merlyn Rees said the government would not oppose the Bill but would be thinking hard about the kinds of information that should be open to the public. The results of a detailed study on how open government can be increased will be published next month, he said.

Ian Percival, for the Opposition, said that freedom of information should be tackled by a code of practice rather than legislation.

'Act quickly to find work for unqualified school-leavers' plea

LACK of investment in education and training and an emphasis on the educational system on the acquisition rather than the application of knowledge, has led to the creation of a large pool of young people who are unqualified for employment in the high skill economy created by information technology, according to Geoffrey Holland, director of special programmes at the Manpower Services Commission.

Speaking last week at a conference on planning for automation (see page 2), Holland said that there must be action quickly at local level to find ways of involving unqualified school-leavers in work projects.

Holland pointed out that 20% of children leave school without any qualifications, and only about 15% have two or more GC levels.

"In planning for the impact of automation we must remember we are at the end of a demographic 'hodge' which will be followed by a 'lammer' Holland stressed.

The peak of the hodge will be reached in 1981 with 250,000 school leavers, which will decline to about 100,000 by 1986, when the effects of the micro on the job market could become evident. The average age of the hodge will be between 20 and 21, he said.

In the next five years, the attitudes of the school-leavers of today will have been formed, he added, and many of the large number of unskilled young people may never get a job and therefore may drift outside society, without any notion to represent their interests. This group could pose major social and political problems.

"There is not on our side and we must find ways of securing access to some form of work for these young people, even if it is to 'import' public service work," Holland said.

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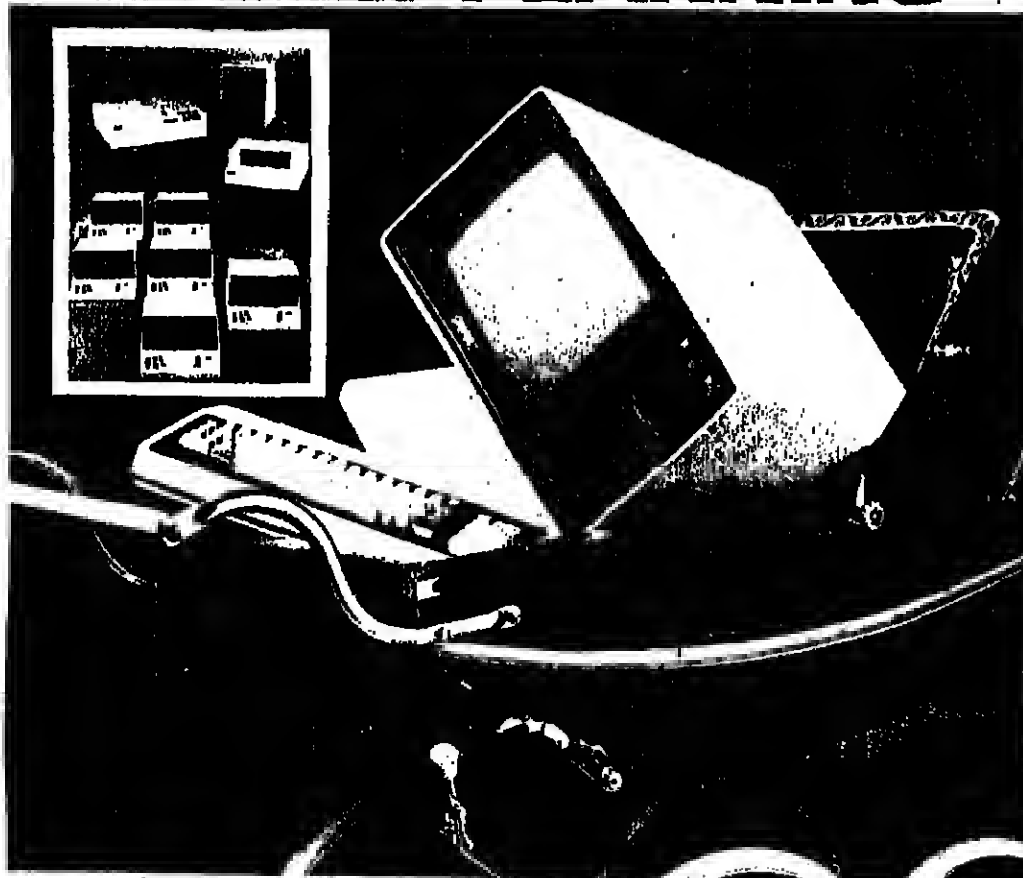
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Sharp rises in profits and sales at Honeywell and NCR

YEAR END figures from Honeywell and NCR make it clear that IBM was not the only computer company doing booming business in 1978 (CW, January 18).

Honeywell's computer business returned operating profits of \$100 million, up 48% over last year, on turnover up 25% at \$1,294 million, benefiting con-

NEWS ROUND-UP

siderably from the surge of interest in the Level 6 mini-line. Profits benefited from a tax credit of \$19.0 million arising from CII-Honeywell Bull, in which Honeywell has a 47%

stake. Tax credit last year was \$10.8 million. Overall, Honeywell recorded net profit up 39% at \$201.4 million on turnover up 22% to \$3,500 million.

At NCR, net profit from continuing operations was up 61% at \$194 million on turnover up 13% at \$2,810 million. During the year, the company increased its investment in research and development to \$138 million, up 20% over the 1977 figure.

LONG AWAITED breakthrough into the building society market for counter terminal systems has been achieved by Phillips with a £500,000 order for PPS 6000 equipment for 35 branches of the Midshires Building Society.

COBOL 74 programs can now be run on a Univac UTS 400 Intelligent terminal using a compiler that can reside on a Univac 1100 or 90 series mainframe. Compiled programs are loaded down line to the UTS 400. Univac has also introduced a magnetic stripe-card reader for the UTS 400 and a screen management

system that simplifies screen formatting and input validation.

AN ORDER worth £350,000 for 20 System Ten 220 computers has been won by ICL from Barratt Developments Ltd, a major housebuilding firm. Applications software to handle accounting and management reporting on the 220s is being developed for Barratt by MA Systems Ltd of Glasgow. The 220s will be installed at Barratt subsidiaries all over the country.

FAMILY of modular factory terminals called the 200 Series has been introduced by Data Pathing (UK) Ltd, a subsidiary of NCR. The terminals operate online to a processor called the System 15 and each terminal has an interactive display and either a numeric only or an alpha-numeric keyboard. Each terminal can also have a badge reader or an 80-column Hollerith card scanner.

ALTHOUGH the Addressograph-Multigraph acquisition of Jaquard is going ahead (CW, December 21, 1978), the big office equipment company's takeover talks with Irvine minicomputer Microdata have foundered (CW, November 23).

Addressograph-Multigraph, which has now renamed itself AM International, offered a share exchange which valued Microdata at about \$47 million. The offer was regarded as insufficiently generous by owners of a substantial number of Microdata shares.

MATCHING IBM's memory price cuts on the 3030 series (CW, December 14, 1978), Amindhl has cut the price of its full line of 470V mainframes by 17% to \$140,000 per two Megabytes, and CPU prices by an average of 11% in the US.

A MICROPROCESSOR-based device that enables IBM 3270 terminals to interface with an X25 packet-switched network has been developed for Chrysler in the US by Associated Computer Consultants of Santa Barbara, California. Chrysler is aiming to make considerable cost savings by linking hundreds of 3271 terminals, located at dealers and depots all over the US, to its Detroit headquarters via the Telenet X25 value-added network. Instead of via leased and dial-up lines.

Downtime by Choice

What we meant to say

DUPS! A reader of Reading has written pointing out a bit of a boo-boo in the issue of January 4 last article on IBM Series 1. I was gesturing that Series 1 was intended as a challenge to the minicomputer market, not said, "This... explains apparent anomalies, such as prior software support and the lack of quality of counts."

Our reader, Mr. Brown, thinks the idea of giving counts for lack of quality is splendid, and should be printed throughout the industry!

What we meant, of course, was quantity discount. Grovel, grovel.

Latest export news is that Abacus computers have been sold to China. Sounds like the old Newcastle, doesn't it?

PEOPLE AND EVENTS

Directors named

PLESSEY has announced the appointment of two deputy finance directors. They are Derek Mayes and Robert Nellist. Mayes, who has been company controller since 1972, becomes deputy finance director (commercial), with responsibility for the analysis and review of worldwide performance. Nellist, currently director of accounting at Rolls Royce, will become deputy finance director (accounting) and his responsibilities will include accounting, budgeting, financial planning and taxation.

DIARY

JANUARY 28 Visit to Watford-Wuldhart, Shafford. RCS Debenhams branch. Apply to W. L. H. Smith, 403431 ext 40.
JANUARY 30 A structured software design method. J. G. Wainwright, MCS Newcastle branch. Barry Bridge Buildings, Newcastle University, Newcastle, 10.00.
JANUARY 31 Data production legislation. I. R. H. Sizem, MCS Edinburgh branch. Heriot-Watt University, Edinburgh, 12.30.
FEBRUARY 1 Microprocessors in automotive applications. ICS Microprocessor specialist group. Polytechnic of Central London, 309 Regent Street, London W1, 14.00.
The role of information in human affairs. G. G. Scarratt, IEE Savoy Place, London WC2R 0EL, 17.00.
Presidential address. Prof Frank Sumner, MCS Merseyside branch. Computer Lab, Liverpool University, Liverpool, 18.00.
FEBRUARY 5 Fortran programming for coltaysi databases. P. Clarke, MCS Rutland Specialised Group, Board Room, ICS, 13 Mansfield Street, London W1, 11.00.
Developments in medical computing. Dr R. Barber, MCS East Anglia branch. Addenbrookes Hospital, Hills Road, Cambridge, 19.00.

Tony Soley has been promoted to the position of branch support manager for the Northern branch of Rediffon. He was previously a senior systems analyst with the company. A former programmer with Bolton Computer Services, Mike Cunliffe has joined Rediffon as systems analyst for Central Accounts North. Annette Peach, who until recently was senior instructor for the Southern branch, of the company, has become junior systems analyst for the London branch. A former programmer with Woodhall-Duckham, Su Brett has joined Rediffon as a junior systems analyst, while Dick Henry has become senior territory manager for the South-East central accounts branch. He was previously employed by British Olivetti as a salesman in the DP division.



Keyes Youmans

Roff Keyes and John Youmans have been appointed to the board of Rediffon Computers. Keyes is managing director of Rediffon Computers, and Youmans is managing director of Rediffon Simulation.

David Youmans has been appointed director of personnel for Honeywell Information Systems. He was previously group managing director of Crane Fruehauf, a subsidiary of Fruehauf Corporation of Detroit, where he had responsibility for the company's operations in Iran.

Tom Sperry, previously a support analyst with Forward Computing, one of the Kwikform companies, has joined the technical support team. Previously sales administration manager for Kwikform, Tom Sperry has become operations manager with responsibility for both the Forward Computing installation and that of the parent company, Kwikform.

The poor relations of the industry

OPERATORS are not only the poor relations of the computing fraternity but also of the management and technical grades in general.

Next to laboratory assistants, they are the lowest-paid members of that section of the work-force, according to a survey analysing wages and salaries throughout the country.

The survey — the fifth in a regular six-monthly series — is based on data from 153 small to medium-sized companies and is published by Revind Regional Surveys.

Results of the survey indicate that the national average salary for operators and senior operators is £2,777 and £3,500, respectively. These sums, when we take into account the figures displayed in operations job advertisements in the various computing magazines, compare rather unfavourably with the salaries paid to other members of the computer industry.

On average, the operations

manager gets a salary of £6,300 and the DP manager receives £7,000. It also confirms that programmers and systems analysts receive salaries which are substantially higher than those of

men 11.0% more, and operators' salaries rose by 10.1%. Senior operators did a bit better, though: their average salary went up by 16.5%.

The statistics are also broken down into regional analyses. The best-paid senior operators and operators are in the Manchester area, with £4,270 and £3,338. Their North London counterparts (companies in other parts of the capital did not participate in the survey) get an average salary of £4,015 and £3,321.

The worst-paid senior operators, with £3,607 per annum, are those who work at Staffordshire sites. Similarly, operators in the Wolverhampton and Birmingham areas get £2,600 per year.

A breakdown of the statistics into categories relating to the type and size of machine operated is, quite obviously, beyond the scope of such a survey. Nevertheless, such an analysis would provide some interesting reading.

National Analysis of Salaries and Wages, Revind Regional Surveys Ltd, 1 Mill Street, Stone, Staffs CV5

BERNARD ALLEN'S OP SPOT

operations staff; on average, they get £4,249 and £5,350, respectively.

Looking outside the computer industry, we find that the national average salary of a draughtsman is £3,966, while a cashier gets £3,500.

From the autumn of 1977 to that season of last year, the DP manager's salary rose by an average of 20.8%, the operations manager's went up by 15.8%. During that period, systems analysts got 16.3% more, program-

Broadening the mind with the IDPM

"As a Civil Servant I have found that not all of the subjects comprising the IDPM examination syllabus are relevant to me."

"Nevertheless, much of it is relevant and I can see how the examinations can do much to prepare an operator for a post in the industry. In addition, to helping him perform his duties properly."

So comments Mr. Gregory, a shift leader from Plymouth who writes to Op Spot in response to an interview, concerning Institute of Data Processing Management membership for operators staff, with Ted Cluff, secretary-general of the IDPM (Op Spot, December 7, 1978).

He mentions that he is a shift leader with "some years' experience" and that he has taken and passed parts one and two of the IDPM examination, and is currently studying for parts three and four.

He views the IDPM examination as a means of helping him meet his responsibilities. "As I see it, as a shift leader, I have three main responsibilities. Firstly, I have responsibility to my family and myself to improve our situation by increasing my knowledge and efficiency and eventually getting promotion. Secondly, I have a responsibility to the department which employs me. They have the right to expect me to give my best. Finally, I have a respon-

sibility to the members of my shift. Part of my job entails the training of my shift members in the operation of the computer equipment and offering guidance on career development. I cannot possibly do this unless I can see to extend my knowledge and experience in the industry."

Referring directly to the Cluff interview, he adds, "I fully endorse Ted Cluff's view that the IDPM syllabus will help the operators gain a broader appreciation of both computing and the industry in general, and I would recommend this course of action to any operator seeking to improve his situation."

Well, I know many operators who have lots of "O" and "A" levels and could easily find positions in other professions if they so desired. Instead they choose to remain in operations because they like it, and want the value of the department to be recognised. In addition, they want to be consulted when some new hardware or software is installed, and deserve salaries which reflect their value to the industry.

The IDPM wants operations staff to learn more about the computing industry. That's fine by me. But it should also educate the rest of the industry as to the true role and value of operators.

Meeting in Birmingham

OPERATIONS is the subject for discussion at the next meeting of the Birmingham branch of the British Computer Society to be held on Tuesday, February 6.

The occasion provides an opportunity for operators to go along and discuss their problems, interests and capabilities with other members of the computing fraternity.

The debate will be led by John Haynes, who is operations manager at the University of Birmingham and a founder-member of the BCS Operations

Specialist Group. The meeting should cover many of the aspects of operations, including such matters as recruitment, training, career progression, the computer room environment and many other problems peculiar to operations.

John Haynes told me, "In fact, I don't mind what operational matters they want to talk about as long as they come along and make themselves known."

The venue is the Priory Hotel in Edgbaston, and the meeting starts at about 8.30 pm.

Operators often complain that nobody listens to their point of view. Well, Op Spot in Reading and Bernard Allen would like to hear your opinions and ideas on all matters relating to computer operations. Your letters should be sent to Op Spot, Computer Weekly, Dorset House, 25 Abchurch Lane, London EC4N 3DF. Telephone calls are gladly welcomed and Bernard can be contacted directly on 01-261 8038.

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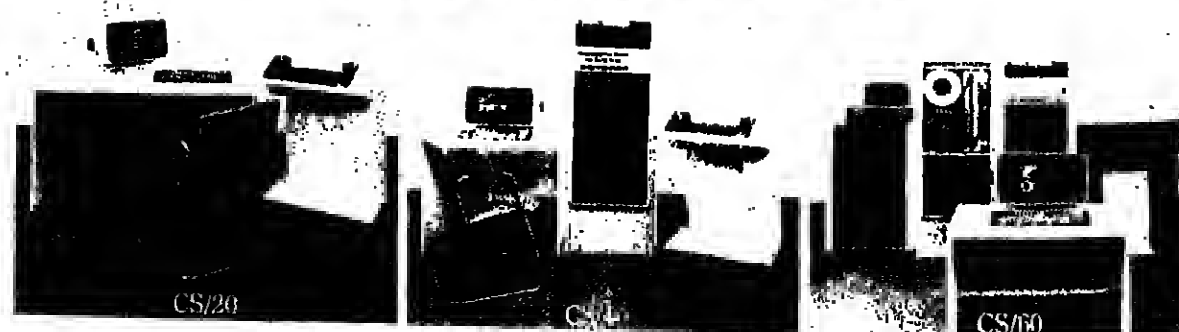
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Cullinane back-end DBMS on the way?

FOLLOWING its implementation of a back-end database on a PDP-11/70 (CW, March 16, 1978), Cullinane is considering producing a database machine which would combine IDMS and a small IBM or IBM-compatible mainframe in a packaged back-end system.

The software which would make such a product possible is at an advanced stage of development, according to the company, and will be released as a software product regardless of whether or not it goes ahead with the database machine.

Called MCS (Multiple Computer Support), the software under development will enable several systems running database applications to funnel all DBMS processing onto a single machine. This has previously been impracticable because of the close coupling between application tasks and IDMS central version routines.

In the new architecture, Cullinane has adopted a packet mode of communication between application programs and IDMS — the same technique it developed for the PDP-11 implementation. This enables tasks to share the DBMS without either threatening the integrity of the database or causing lengthy lock-outs of competing processors.

Much of the redesigning necessary to support the new architecture has already been implemented in IDMS Release 5.0, noted a spokesman, and with the completion of MCS "all the software will be in place".

MCS is to be implemented in three phases. The first phase, MCS will provide the channel-to-channel connections between processors in close proximity. This software will be delivered to first customer test sites in about three months and will run under all versions of IBM's OS/VS.

Subsequently, Cullinane will

implement full telecommunication support with MCS. This will be integrated with the new IDMS-DC teleprocessing monitor (Software File, November 2, 1978), which entered user testing at the beginning of this week.

In its PDP-11 back-end implementation, some 1500 miles separated the minicomputer from the IBM 370 whose database requests it was processing. Although this system linked just two machines, there is no reason why the software should not link multiple application sites to a single central database.

Much of the attraction of taking the next step and producing a packaged database machine must derive from the dramatically improving price/performance characteristics of suitable hardware. Cullinane will be examining not only the imminent IBM E Series but also the wide range of low-cost plug-compatible systems.

No decision has yet been made to enter this market, but a Cullinane subsidiary has been tasked with evaluating its potential. One of the problems already identified is the commitment the company would have to make to maintaining hardware as well as software.

A packaged hardware/software system has, however, a strong appeal and it is some areas offers significant technical opportunities. One idea already being explored by the company is that of microcoding parts of IDMS on the chosen machine.

Dedicated database machines have been under discussion for some time, but one of the most intriguing predictions in this area was made last year by Captain Grace Hopper. With collapsing hardware costs and the rising cost of software, she said, the time could be foreseen when purchasers of a complex software system would be given the

hardware on which to run it for nothing.

Back-end database systems in general have also attracted recurrent industry attention. While advantages — such as increased security and integrity — have prompted most DBMS developers to experiment with such systems, a common view is that little commitment will be made in this area until a clear initiative is taken by IBM.

Principal forum on Fascia package

THE continuing growth in the user base of the fixed asset accounting package Fascia means that RTZ Computer Services for the first time expects over 100 delegates at the annual user group meeting, to be held next month.

The principal forum for discussion on the development of

A COBOL debugging aid is the latest option to be added to ADR's online programming system Roscoe. Called Cobol/Ade, the software aims to increase programmer productivity by providing full diagnostic information from test runs.

Cobol/Ade supervises batch mode program execution, collecting data according to a specification previously given by the programmer. It subsequently presents the data for online browsing.

One of its functions is to translate system information into the Cobol programmer's language. For example, instead of reporting a "SOCL" operation exception, it will report an ahead caused by attempting to read a closed file.

It also provides such facilities as a verb-level trace of logic flow; dynamic analysis of P-R-FORM logic; dynamic display of data in Cobol mode; and routine statistics such as paragraph execution count.

All abends due to logic errors are trapped and analysed automatically by the aid.

The package is likely to be available from the UK by early next month. It will cost about £2,000 to test Roscoe users.

Another recent Roscoe enhancement was the introduction of a word processing facility based on ADR's ETC (Extended Text Compositor) system, scaled down version of the ETC under CICS, the facility designed to ease the production of business letters, memos and other such documents.

Also introduced was Roscoe/ETC Interface, giving users access to the full ETC system.

PROGRAMMER NOTES HAVE BEEN HELD OUT THIS WEEK DUE TO THE PAPER SHORTAGE. IT WILL BE BACK NEXT WEEK.

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DEC merges real time system with IAS

IN a step which partially rationalises its operating systems for the PDP-11, Digital Equipment has merged its real time system RSX-11D with the latest release of the all-purpose IAS. With the new software, IAS Version 3.0, users can generate either RSX-11D or IAS from the same source code.

The new release has also enhanced IAS in a number of areas, notably by improving the efficiency of memory management and the heuristic time scheduler.

IAS (Interactive Application System) was originally developed by DEC in the UK, based on the extension of RSX-11D. One significant effect of the new work, which was also performed in the UK, will be to bring together development and maintenance effort on the two systems.

Although RSX-11D users will have to learn a new system

generation procedure, this should pose few problems to experienced users, according to a DEC spokesman. Part of the IAS enhancement had been to simplify the system, he added.

Three systems could now be generated from IAS, he said. A real time only operating system, corresponding to RSX-11D; a multi-user system offering real time facilities together with the heuristic time scheduler; and a full-blown IAS system, supporting concurrent timesharing, batch, and real time tasks.

The name RSX-11D would no longer be officially used.

The most significant IAS enhancement, he said, was the incorporation of memory management directives. These could be regarded as providing a memory-held overlay mechanism and would be considerably faster than the existing disc-held overlay technique, which would continue to be supported.

The other major enhancement, he noted, was the integration of the heuristic time scheduler with the executive. It had previously been a dependent subsystem and its incorporation into the executive would reduce executive level overheads.

The heuristic software provided with IAS is the most sophisticated scheduler supported on the PDP-11 range and works by modifying resource allocation according to resource use in previous time slices.

Puzzler

DURING tests on a new computer installation, five different voltages are measured two at a time in series. Every possible permutation of two from five is recorded, giving ten separate readings as follows: 94, 98, 104, 91, 85, 87, 89, 103, 92, 89 (these are in no particular order).

What are the five voltages? See page 45 for solution.

Cobol debugging aid added to Roscoe online system

MARTIN BANKS PREVIEWS NEXT WEEK'S MICROSYSTEMS 79

WITH over 50 companies exhibiting at next week's Microsystems 79, the second staging of this successful show, visitors again promises to be an important focal point for the growing numbers of people interested in the use and application of micro systems. As at last year's show, visitors will come, some armed with cheque book and credit card for an instant purchase, but mainly looking for that vital commodity with any new technological development — information.

For this reason, this year's conference, run in parallel to the exhibition, could prove to be one of the most significant on the subject held in this country.

Aiming primarily at industrial and professional users, and potential users, the first day of the three-day event will contain several case histories.

An application that is becoming something of a minor classic — and also something of an answer to that other "classic", the Swiss watch industry — is the one at British Sugar. Robert Bass, from the company, will head off the case studies section, discussing in detail how micro-based control systems affected both the running of the sugar processing plant, and the

Showcase for the micro industry

Microsystems 79 will be held at the West Centre Hotel, Lillie Road, London SW6, from January 31 to February 2. Exhibition times are from 9.30am to 6pm each day. The conference starts at 9.15am on the first two days, and 9.30am on day three.

management of the operation.

The subject of cost, and in particular the cost of software, will be the theme of Martin Lloyd, a consultant with D M England and Partners.

Software is also a problem for the staff that will eventually use the equipment once it is installed in a new application, and can lead to radical changes being made in a company's organisation. Chris Blake, technical director of Trivector Systems, will examine the new skills that will have to be learnt, and there will also be an examination of the effects of a micro-based pro-

duction on production techniques.

Day two is very much for the designer contemplating using microprocessors. Most of the papers will look at various aspects of the chips themselves, covering design problems, interfaces, bubble memories and device architectures. One paper, from Paul O'Grady of Micro Focus, will examine the advantages and disadvantages of using high level languages in the design of a system.

The variety of hardware design routes open will be covered by two papers. The first, from Roger Bennison of Cambridge

Consultants, will look at designing systems with single board microcomputers, especially for applications requiring low production volumes. High volume applications are more and more becoming the domain of the single chip microcomputer, and this will be the subject of the paper by Richard Helyer, of CIA Gwynedd. In particular, he will look at some of the new architectural trends in single chip devices, such as the on-chip functional I/O capability.

John Muston, of Murecon Avionics, has been examining the architectures of some of the new 16-bit micros appearing on the scene, and will present a paper on these apparently powerful new processors.

Advances in some areas of the technology will also come in for scrutiny, with Eddie Bleasdale talking on the new, sophisticated interface components being developed; and Peter Newman, of Plessey, giving a paper on the promise offered by bubble memory technology.

The final paper of the day will come from Vincent Tseng, of ICL Datskil, on the problem of choosing a, usually expensive, development system.

Day three is more for fun, though it will probably be as seriously discussed as the two former sessions — for this will be personal computing day. Stewart Stevenson, of the Scottish Computer Society, will set out to answer the question, "How do I start in personal computing?" This will cover such irritating points as what to buy, what not to buy, and how to meet others like yourself.

Once you have a system, how do you put it to work? Addressing himself to this point will be Robin Bradburn of the North London Polytechnic, who will describe some of the things he has achieved with a variety of hardware and software.

For the real DYER, Alan Clements, of Teesside Polytechnic, will examine some of the considerations of kit design, and some of the technical problems that must be overcome to get to grips with the subject.

Basic has become something of a de facto standard for personal computing software. But some say it will not always remain so. Martin Fleet, of Liverpool University, will look at the growing interest in Pascal, and its chances of denigrating Basic as the leading language.

Semiconductors tend to work for a long time without fault, but they don't last the first time they are used. But for systems built using such devices, the same cannot always be said. Robin Woods of Ister Woods will consider what to do about it.

Vincent Tseng, of ICL Datskil, returns to the podium to talk on the potential capabilities, and pitfalls, of "store bought" software — the rapid growth in packaged programs.

What might prove to be the sting in the tail of the whole conference comes with the last speaker, Robert Denton of Texas Instruments. He will talk about what the future holds in personal computing.

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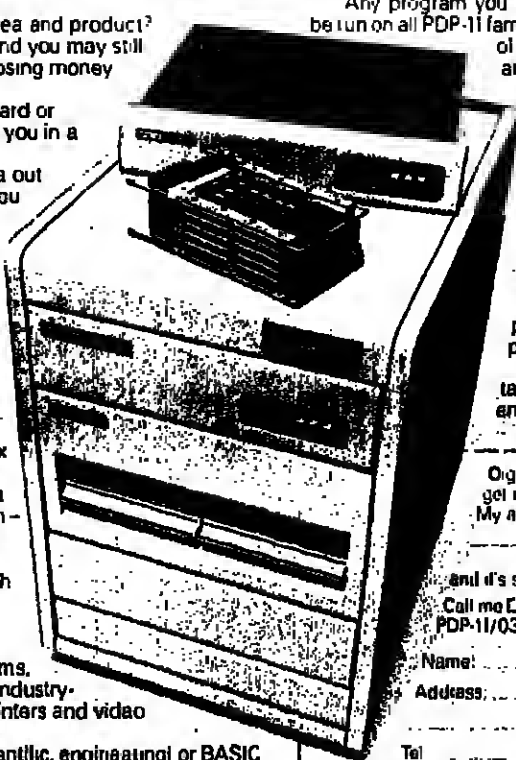
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COMPUTER WEEKLY republished the Central Computer Agency advertisement No CEH/21 in error in January 11th issue. The closing date for that advertisement has been repeated and is not being extended. We regret any inconvenience caused by this error.

HEXAGON
computer services
145 WARDOUR STREET, LONDON W1V 3TB

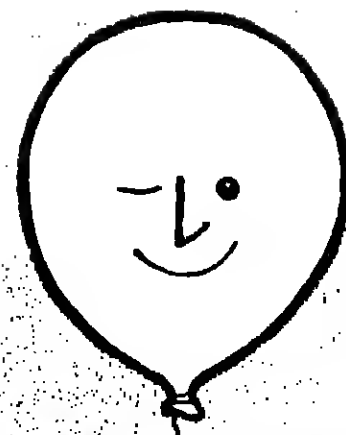
Contract & Permanent recruitment
Total DP Support at its best
Programming, Operating
Data Preparation, Systems
Data Control, Technical Support

Appointments

CHRIS PRIER
Assistant Classified
Manager
01-281-8028

LONDON
Eddie Farrell 01-281-8028
Mark Williams 01-281-8028
John Farrer 01-281-8028
Nancy Gibbs 01-281-8028
John Pate 01-281-8028

MANCHESTER/GLASGOW
Owen Kelly 01-672-4211
BIRMINGHAM/BRISTOL
Basil McGowan 01-353-4838



RATES:
£10 per single
column cent
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7-£9
13-£8
26-£7
52-£5

COMPUTER WEEKLY - Highest requested circulation at a cost per thousand 25% lower than the nearest competitor.

MYRIAD

BUSINESS ANALYSTS

NEW 2960 INSTALLATION

LUTON c£6,500

Our Client, a major British Industrial Company, wishes to appoint two Business Analysts within their central management services department.

The Business Analysts will hold responsibility for various assignments within production divisions and will supervise the relevant applications development personnel using the computer installation a new ICL 2960 hardware.

Candidates should have a proven record of successful systems implementation and possess the necessary personal qualities and experience to represent the department in co-ordinating requirements of General Management and involving travel to the operating divisions within the UK. In addition to an excellent benefits package the persons appointed can look forward to a positive career path within an expanding department where rewards are closely geared to one's personal achievements.

Ref. A1/2501

SYSTEMS ANALYSTS

HERTS./MIDDX. £5,500-£7,000

We are seeking to recruit experienced Systems Analysts with good business skills who wish to consolidate their careers within a major, international organisation. A wide variety of systems, some of which form part of complex, multinational projects, are developed on the latest IBM equipment at modern, purpose-built offices.

The Analysts may be involved in the planning and control of several minor projects running concurrently and, on occasions, will be responsible for small systems teams. Additionally, the Analysts will:

- * PREPARE BUSINESS PROPOSALS
- * COST & BENEFIT APPRAISALS
- * CO-ORDINATE PROJECT DEVELOPMENT
- * ESTIMATE PROJECT REQUIREMENTS

Travelling by either private or public transport should prove no problems as the offices are ideally situated in Outer London. Employee benefits are commensurate with other major organisations and include re-location expenses, an excellent staff restaurant and a very active sports and social club.

Ref. S3/2501

MYRIAD APPOINTMENTS LIMITED
30 Fleet Street London EC4Y 1AA
01-353 0981 24 HRS.

Before you break the bank take a Knight contract

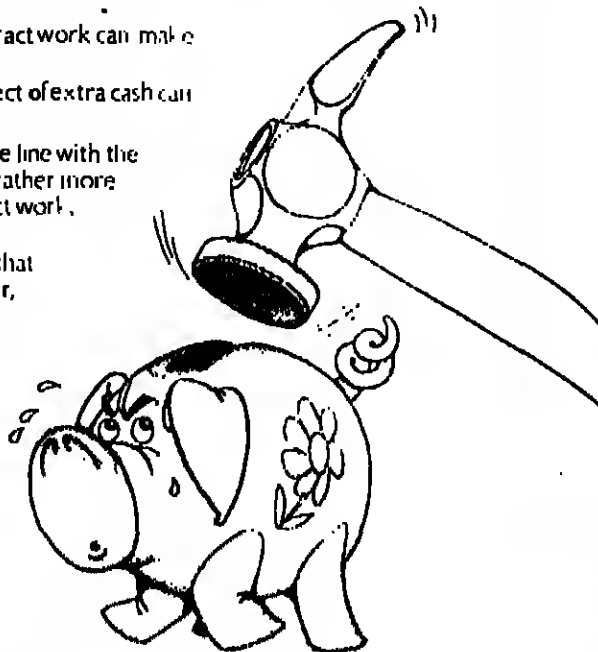
Everyone knows that opting for contract work can make you a lot of money. And there are times when the prospect of extra cash can be very, very tempting.

But before you rush off and sign on the line with the highest bidder, we'd like to suggest a rather more powerful reason for choosing contract work. Namely, experience.

We can steer you towards contracts that could fill important gaps in your career, and pack more experience into a few months than most people see in years.

And that's something that's hard to put a price on.

Immediate/Forthcoming UK and European Contracts.



Operators

ICL 2903/4 Exec 1 & 2 Ops.
ICL 2980 VME/B Ops.
ICL 2960 VME/K Ops.
ICL 1900 GII & GIII Ops.
ICL GIII
DATA CONTROLLERS
IBM 360 OS/MFT
II/HASP Ops.

IBM 370 OS/VS1 & VS2 Ops.
IBM System 3 Ops. all models
IBM 370 - DOS VS POWER
& GRASP Ops.
Honeywell - OS 2000 Ops.
Terminal & VDU Ops.
Varied contracts

* PART-TIMERS WELCOME TO REGISTER *

For further details or advice on these or other U.K. and European Contracts, call Sue Smyth, June Mogg or Jane Asbury, NOW! on 01-491 4706 or 01-439 3411.

Programmers/Analysts

UK:

IBM OS COBOL +
FORTRAN - LONDON
IBM ASSEMBLER - BIRMINGHAM
IBM DOS RPG II - LONDON
IBM RPG II + CCP - TYNESIDE
IBM ASSEMBLER + COBOL - SURREY
IBM SYSTEMS ANALYST - MIDDLESEX
ICL ANALYST - LONDON
HONEYWELL COBOL + IDS - LONDON

OVERSEAS:

IBM MV/SYSTEMS PROG - HOLLAND
IBM IMS SYSTEMS PROG - HOLLAND
FORTRAN - HOLLAND
IBM OS ASSEMBLER - ITALY
MICRO PROCESSOR SOFTWARE
CONSULTANT - W. GERMANY
ICL 2900 VME - MIDDLE EAST
ICL 2900 VME COBOL - EUROPE

Please contact Richard Kaluzynski, Neil Williams or Suzy Gillam: 01-491 4706 or 01-439 3411. All vacancies are open to both male and female applicants.



Knight Computer Services Limited
14 Old Park Lane, London W1Y 4NL
Staff Services Division of BOC Datasolve Group and
a member of Computing Services Association

01-491 4706

MYRIAD

**OIL/NATURAL GAS INDUSTRY
COMPUTING APPLICATIONS
SPECIALIST
GULF STATES**

**DIRECTOR OF
STRATEGIC PLANNING**

**c£20000 + p.a. TAX FREE
Substantial Fringe Benefits**

This position presents a rare opportunity for an experienced manager with a successful record of functioning in a strategic planning role, specifically exploiting the use of computers within the Oil or Natural Gas Industries.

As Director of Strategic Planning the men appointed will be required to establish and ressource a new unit, the prime objective of which will be to produce, recommend and successfully implement at directorial and ministerial levels, five year strategic and operational plans for the development and expansion of major computing facilities within the oil industries of the Gulf States. The successful candidate will report to the company's area manager, although his working contacts will be primarily with oil company management. He will be responsible for managing a team of senior consultants.

The Director of Strategic Planning will possess a comprehensive knowledge of potential applications areas within the oil or natural gas industries, to which modern mini and main-frame computer technology can most effectively be applied. He will also have an understanding of the direction in which computing is likely to develop within the industry. Ideally with an awareness of business practices and protocol within the Middle East candidates should be capable of commanding a high degree of respect within the industry and achieving commitment to their recommendations and plans.

This Company is a major European multi-national organisation. The contract will be negotiated in light of the successful candidates record of achievement.

Ref: A2/2501

MYRIAD APPOINTMENTS LIMITED
30 Fleet Street London EC4Y 1AA
01-353 0981 24 HRS.

Success creates new opportunities in sales & marketing

1978 saw Modcomp firmly established as one of Europe's leading suppliers of mini computer equipment, particularly in the industrial process control and communications field. New product lines, also UK manufacturing and development programmes, will enable Modcomp to consolidate its position and achieve increased growth throughout Europe during 1979. New roles have been created in the sales and marketing area as follows.

Regional Sales Manager

We need an aggressive, highly motivated individual who will ensure that Modcomp further penetrates the UK and Scandinavian markets. He/she will be able to demonstrate a proven successful background as a Sales Manager in the industrial mini field. As a Manager, will define sales strategy, investigate new client bases, direct and motivate sales and sales support staff. This role will be based at our Wokingham office but will obviously involve travel throughout Europe. Remuneration reflects the importance we place in this role.

Company benefits are excellent and include company car, non-contributory pension and free BUPA. Only successful sales and marketing people need apply for these jobs. We pay well because we want the best.

OEM Marketing Manager

This individual will be responsible for the development of Modcomp's OEM market in Europe. This will involve establishing sound business terms and conditions, identifying product needs, writing business plans to support the development of new products and generating specific sales tools. It is a role which will attract someone who has several successful years of technical selling or marketing in the computer systems OEM marketplace, and who is motivated by the achievement of aggressive goals. This job is Wokingham based but will involve some travel outside the UK.

Contact ANNE CAMPBELL at Wokingham (0734) 791179 or send C.V. to her at MODCOMP, Broad Street, Wokingham, Berkshire.

Area Sales Manager

The Northern Area Manager, UK, is fundamental to our success in the UK and in particular the area north of, and including, Coventry. This individual will develop sales in the area by directing sales and support people working from Coventry, and will not be afraid to do some direct selling as well. He/she will already be successful in selling in the industrial/scientific mini market and will be looking for the opportunity to develop further his/her skills as a Manager in a company which offers high rewards for high performance.

MODCOMP

"Go INMOS young man"

WHAT?
INMOS is the new semiconductor venture set up to compete in the world market for advanced VLSI devices.
INMOS is establishing design and marketing activities in the UK and the US, with a prototype facility in the US and the main production centres in the UK.
INMOS is developing two micron channel MOS technology which will be used to create the standards for the next generation of memory and microprocessor components.

WHERE?
INMOS is establishing its UK Technology Centre at Bristol. This Centre will have responsibility for developing new products with the primary emphasis on microprocessors.
At the same time INMOS is establishing a US Technology Centre to develop memory components. The Technology Centres have been chosen with care to provide the best possible environment for the superstars we want, with the attractions of beautiful countryside, city life, good schooling and a wide variety of housing at acceptable prices.
There are opportunities at both the UK and the US Technology Centres and interchange between the two Centres will be encouraged.

WHO?
At Bristol, INMOS is recruiting a design team to conceive a new microprocessor philosophy for the standard system component of the 1980's.
INMOS wants, MOS process and design engineers to develop basic technology, Computer architects to create a component that is programmable and connectable, and Software designers to evolve the language and compilers to turn that component into a system.
The work involves innovation in design, architecture and software, and INMOS wants people who can make a contribution at all levels, from design superstars and managers to junior staff with potential.

HOW?
We want the best Men and women who can contribute to the leading edge devices which will establish INMOS as a major force in the semiconductor industry.
We offer the most The opportunity of a new Company, the pleasures of the West Country, the satisfaction of good rewards, the challenge of the future.
Write NOW for more information and an application form to Iain M Barron
INMOS Limited
Whiteknaps,
Lewins Mead,
Bristol.

inmos

Secretaries
Demonstrators

Ring Bridge
or Jenny
for a change
486-5644

WHAT ARE YOUR PLANS FOR THIS YEAR?
If they include making that career change you'd been promising yourself, we are here to help.
You won't get where you want to be tomorrow by not calling us!

INSIGHT for a change
72-75 Marylebone High Street, London W1M 4AJ. Telephone: 01-486 5644

JBA

SOFTWARE DEVELOPMENT/SUPPORT ON-LINE COMMUNICATIONS NETWORK

Our client, part of a large and diverse British manufacturing group and itself a very substantial company, is currently developing a new range of commercial systems for both their IBM 370/138 and a new on-line network of 8 PDP 11/70's.

To provide development and software support for the installation of the new network, the following professional programmers are urgently required:-

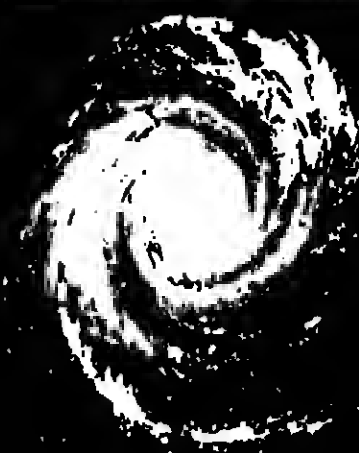
Software Specialist salary to £8,000 pa

Candidates should possess extensive knowledge of DEC software, comprising a minimum of 3 years in software - preferably on RSX-11M systems. The appointee will be supporting both the network system and the applications programming teams - a wide range of responsibilities.

Assembler Programmers salary to £7,000 pa

The successful candidates will be working on the development of the communications network, so preferred applicants will have an RSX-11M/MACRO-11 background. However, applicants with at least 2 years ASSEMBLER experience on other types of hardware will be considered, and if appointed will be given full DEC training.

Contact Margaret Stevens for more details
JAMES BAKER ASSOCIATES
International Personnel Consultants
16 Maddox Street London W1
Telephone: 01-491 4478



WANG

Join the superstars

Without a doubt one of the brightest stars in the Computer Industry today is Wang (UK) Limited, their advanced technology and well designed computer and word-processing systems have firmly established them in a well recognised sector.

Recently they announced their virtual storage memory processor, offering the newest range of software aids to increase Programmer productivity dramatically. Storage is virtually unlimited, conversion is easy, all the grown-up languages are available and the 2200 VS has a smooth growth path from a small to medium sized installation with positively no changes to the application software.

The 2200 VS is designed as a business computer and as such provides a data processing function in an office environment. The essence of data processing in this context is to efficiently and speedily store, organise and retrieve data, thus providing multiple users with a timely and accurate response to their requests. With this aim, the 2200 VS, is an office computer that is accessible, modular and industry compatible. The 2200 VS meets these design aims by combining sophisticated but simple to use software, with a wide range of hardware.

Wang (UK) Limited is ten years old, having a large UK user base, selling primarily to the end user, with a growth rate in excess of 50%. The major new release of equipment, designed and engineered with today's needs in mind, represents a simple yet sophisticated computer product range.

This young, vital, computer manufacturer has experienced substantial marketing success and has therefore retained SCR to recruit into the following areas - Sales, Support and Field Service. The people we seek will certainly possess the enthusiasm and energy necessary to achieve the career progression inherent in the small, flexible and dynamic Company environment which is Wang (UK) today.

Sales Executives - Income package to £15,000 pa plus Car

You are currently successful and possess a proven track record in selling mainframe or minicomputer hardware. Couple this with motivation and determination and you have the qualities necessary to spearhead the launch of the 2200 VS and the consequent attack on the market place. You will be working in a branch structure reporting to the Branch Manager, receiving excellent technical support and working towards realistic quota objectives.

Technical Support Consultants - c. £7,500 pa plus Car

Essentially, self-motivated Programmer/Analysts possessing a high technical capability coupled with a sound commercial awareness. Your mainframe background should include three years solid experience in high level languages - Cobol/RPG/Basic. You will be expected to be au fait with standard commercial applications.

Demanding opportunities exist in both Pre- and Post-Sales roles, ranging from assistance during Sales meetings and involvement in presenting proposals, to liaison with outside software resources and having project control responsibility to detailed second level technical trouble-shooting.

Field Service Engineers - c. £6,500 pa plus Car

An absolute minimum of six months experience is required in mainframe or minicomputer hardware and associated peripherals, or possibly a background in the communications industry.

Working in a branch function, Field Engineers will be responsible for the service and support of a Client base within a geographical area.

Following training, you will understand virtually all phases of systems operation and maintenance. You will perform installation of systems, diagnose system problems and repair/replace to component level. You will also be given the opportunity to gain an understanding of basic programming techniques.

All positions involve the ability to cope with customer liaison at Management level and therefore your business attitude and communication skills are equally as important.

Where? Opportunities exist in the London area, Midlands, and Manchester.

For Midlands, Northern and Sales positions contact in the first instance: **Richard Champion** on 021-236 3781 weekends or evenings Hagley 4166

For all positions in the South (except Sales) contact in the first instance: **Dave Scarlett** on 01-935 0671 weekends or evenings 01-540 3549



Specialist Computer Recruitment Ltd.
Birmingham:
Equity & Law House, 35-37 St. Charles St., Queensway, Birmingham Tel: 021-236 3781
London:
3 Mandeville Place, Wigmore Street, London W1M 5LB Tel: 01-935 0671

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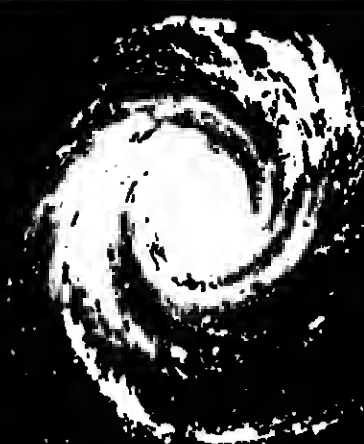
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London:

3 Mandeville Place, Wigmore Street, London W1M 5LB Tel: 01-935 0671

SCR Computer
Recruitment
Association

DOS/VS

EXPERIENCE . . .

..... then
advance your career
in CROYDON

Here are two first class career opportunities for current operations personnel with substantial IBM 370 DOS/VS experience.

A large international company successfully installed last year an IBM 370 in a purpose built data centre in Croydon. Running under DOS/VS and POWER/VS both batch and on-line work is processed.

OPERATIONS SUPPORT to £5500

A further member is required for our clients operations support team. The work will be interesting and varied, involving procedures, scheduling, controlling various aspects of the operations area, and close liaison with the Systems and Programming area.

Applications are invited from senior operators or shift leaders with 3 years or more experience of working in an IBM 370 DOS environment.

JUNIOR SOFTWARE PROGRAMMER to £5500

For this position, in addition to good DOS/VS experience, you will have an appreciation of COBOL and/or ASSEMBLER programming.

The successful applicant will become involved in the development and maintenance of operating systems and TP monitor, distributive processing based on minis, evaluation of new software and will provide technical support to the development and operations sections.

In addition to a good start salary, benefits include a non-contributory pension and free life insurance.

Would you like to know more, then contact REX SCOONES at Capp Associates CROYDON offices, indicating which of the two above positions is of particular interest.

Please note
new address
same phone
number

Positions open to male & female applicants, please telephone (24 hour service) for initial discussion or write to address below.
QUOTE REF. CW 106.9S.

COMPUTER AND
PROFESSIONAL
PERSONNEL
CONSULTANTS



CAPP ASSOCIATES
LONDON AND MANCHESTER

Computing
Services
Association

01-686 9693
A.M.P. HOUSE, DINGWALL RD.
CROYDON, CP9 2AU

Computer Board For Universities And
Research Councils

Joint Network Team Appointment of Head

Recognising that flexible and compatible interconnection arrangements will play an important role in extending access to computing resources and expanding the range of facilities available to computer users in the academic community, the Computer Board and Research Councils are to set up a Joint Network Team. Its main aim will be to prepare, supervise and participate in a coordinated programme for the further development of computer networking among universities and Research Council institutes.

The specialist team is expected to consist of up to six posts and will be located at the Rutherford Laboratory, Chilton, Oxfordshire.

The responsibilities of the Head of the team will include presenting a programme of work to the Computer Board and the Research Councils for financial approval and supervising its execution. He will be called on to make recommendations to the sponsoring bodies on network plans for individual universities and Research Council institutes and to advise on technical and financial aspects of computer networking. An important part of the post will be to establish and maintain collaborative relationships with senior managerial and technical staff in computer centres throughout the academic community.

Applications are now invited from people with an interest in computer networking and with experience of university and Research Council computing. Applicants should have the ability to manage technical projects and a sound basic knowledge of computing and telecommunications technologies. Familiarity with current trends towards networking standards and proposed public packet-switched services would be an advantage.

The appointment will be for a fixed term of three years.

The salary will be in the range £10,746-£12,091 or £10,043-£11,300 depending on the superannuation scheme chosen.

Further details and an application form may be obtained from Jane Griffiths in the Personnel Group, Rutherford Laboratory, Please quote reference VN.760. Closing date for applications 12th February 1979.

Rutherford Laboratory, Chilton, Didcot, Oxfordshire OX11 0QX. Tel: Abingdon 21900.

JBA

MICROSYSTEMS APPLICATIONS EXECUTIVE

Midlands

£9,000

We have been retained by a large diverse international engineering organisation, employing 100,000 people worldwide, to recruit a senior microsystems specialist to take responsibility for the development of microprocessor technology in both the products and the manufacturing activities. The prime role is to provide the centre of expertise for each of the divisions in a co-ordinated manner.

Candidates should have a degree, coupled with several years in industry developing CAD/CAM systems, and a proven record in the design of microsystems. Management experience, perhaps as a software/graphics project manager, would be an advantage. Above all, applicants must have the ability and personality to negotiate with senior managers including divisional directors.

This is an outstanding opportunity to influence the use of microprocessors in industry. Salary is negotiable according to experience. Attractive company benefits including relocation where appropriate.

In the first instance please contact:

Jim Baker
JAMES BAKER ASSOCIATES
International Personnel Consultants
16 Maddox Street, London W1
Telephone 01-491 4478

JBA

GERMANY

JBA can offer a very wide selection of vacancies throughout Europe, ranging from programming and analysis, d.p. instructors, lecturers, to high level consultants. This week we feature some of the permanent and contractual jobs in Germany.

DOS/VS

PROGRAMMERS
PROGRAMMERS/ANALYSTS

£ DM60,000
£ DM65,000

The client is a highly reputable consultancy organisation in Southern Germany whose combined engineering and computer development experience is almost second to none. Their services range from scientific and research projects to commercial and industrial applications systems.

One of their current projects requires a team of experienced IBM 370 DOS personnel, who must have at least 2 years PL/I programming, together with COBOL and/or PL/I. Previous use of decision tables is essential for at least one team member.

The team will ideally commence Feb/March and will continue for not less than 1 year with subsequent assignments available for an extended stay in this wonderful part of Europe. German is desirable but not essential.

SYSTEMS PROGRAMMERS

DM60,000-DM90,000

Several permanent positions are available in a new systems support team currently being established by this major computer manufacturer, who are vastly expanding their range of hardware for 1979. A minimum of two years experience is required, together with a thorough knowledge of DOS.

Our client is offering higher than average salaries (in UK terms £16-24k), plus house agent and removal expenses, initial family separation allowance, a minimum of 6 weeks holiday (+ all statutory holidays) and paid time off to attend German lessons. An excellent package.

OS/MVS

COMMERCIAL APPLICATIONS
DEVELOPMENT

This large computer services company is situated in a superb part of Southern Germany, near one of the oldest and most beautiful towns in Europe. Successful applicants can be assured of a career within the organisation and an excellent, progressive salary package.

APPLICATIONS PROGRAMMERS

Salary: start at DM50,400 rising to DM65,300

A minimum of three years commercial programming experience, with a sound knowledge of IBM 370 OS COBOL. Experience of BAL would be viewed extremely favourably, as would the ability to speak German although neither of these is mandatory.

SYSTEMS ANALYSTS

Salary: start at DM56,300 rising to DM73,000

Candidates must have had formal training in Analysis, backed by a period of at least two years in commercial programming. Five years d.p. experience in all is required, so applicants will have had a good deal of exposure to commercial systems and applications. Knowledge of German is more important in these positions.

.... ALSO

SOFTWARE PROGRAMMER
(2900 Fortran)

DM50,000-DM60,000

Our client, located near Stuttgart, is seeking a technician to assist in the development of a complex scientific system involving digital image processing techniques.

Applicants must have ICL 2900 Fortran programming experience, a scientific or technical background—including use of data simulators and test drivers—plus the ability to work without supervision. Long term project with lots of technical involvement and experience-building prospects.

WAREHOUSE AUTOMATION

£ DM68,000

Tremendous opportunity for a specialist in process control systems to head up a small project team designing a complete micro and mini based system to automate a large warehousing and goods storage facility.

This position would initially be offered on a contractual basis, although the chances of subsequent permanent employment are excellent.

Contact: Mike Creamer or Andy Wright

JAMES BAKER ASSOCIATES
International Personnel Consultants
16 Maddox Street, London W1. Tel: 01-491 4478

Handwritten signature

ata Computer Recruitment

A division of ATA Selection and Management Services, recruitment consultants to industry and commerce since 1962

SALES EXECUTIVES £13,000 NATIONWIDE

As one of the most recognised International manufacturers of electronic equipment, with Consumer, Commercial and Communications bases; our client enjoys a reputation envied by many.

Opportunities now exist throughout the UK to join their dramatically successful computer division. With their long term experience they are capable of offering terms of employment unavailable elsewhere. Initial product training is designed to enhance product quality. Excellence of service support ensures that the successful sales executive need never worry about reliability.

The company pay-plan will give the experienced mini-computer or sophisticated business systems sales executive (male/female) a basic salary of c £6,000.

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Quota commission earnings and generous bonuses ensure that the truly determined will achieve first year earnings of £13,000. A quality saloon car, full expenses plus other multinational company benefits complement this desirable package. For a confidential discussion please contact your nearest branch.

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Software Sales Executive

HOME COUNTIES
c £12000 + Quality Car

Our client is a highly successful computer services company with a reputation for providing quality application software. Established for over 6 years the company has developed a strong client base and is now set to double turnover in 1979. This has created a superb opportunity to join the mini computer division.

Based in the N.W. Home Counties, the prime function will be to develop sales penetration across a broad spectrum of commerce and industry, backed by a strong technical support and consultancy team. As the chosen software company of 2 leading mini-computer manufacturers — 50% of current business is being operated through leads, a very real advantage in a competitive market.

This is a key appointment which will lead toward a developing career within the company. Therefore we are seeking a highly skilled sales "professional" able to demonstrate a successful track record in the software, mini-computer or associated markets.

Rewards by way of high base salary, guarantees and generous performance bonuses should realise £12,000 in the first year and £15-20,000 in the 2nd year. In addition there is a quality car provided.

Applicants, male or female, should apply in strictest confidence with career details to: M. Winer, Director, Gresham Executive Appointments, 1 Harewood Place, Harewood Square, London W1R 9HA. Tel: 01-629 9841/4

Gresham
Executive Appointments

SENIOR SYSTEMS ANALYST NEW MINICOMPUTER

Initially Germany up to £15,000

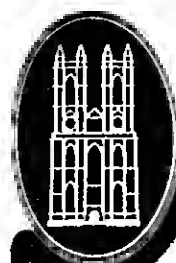
OUR CLIENT is a respected and well established international manufacturer of sophisticated data processing systems.

THE POSITION entails development of commercial application systems for new range of minicomputer, is a key role in this exciting project and offers a major career path to the person appointed who will have the opportunity to return to the UK after two years.

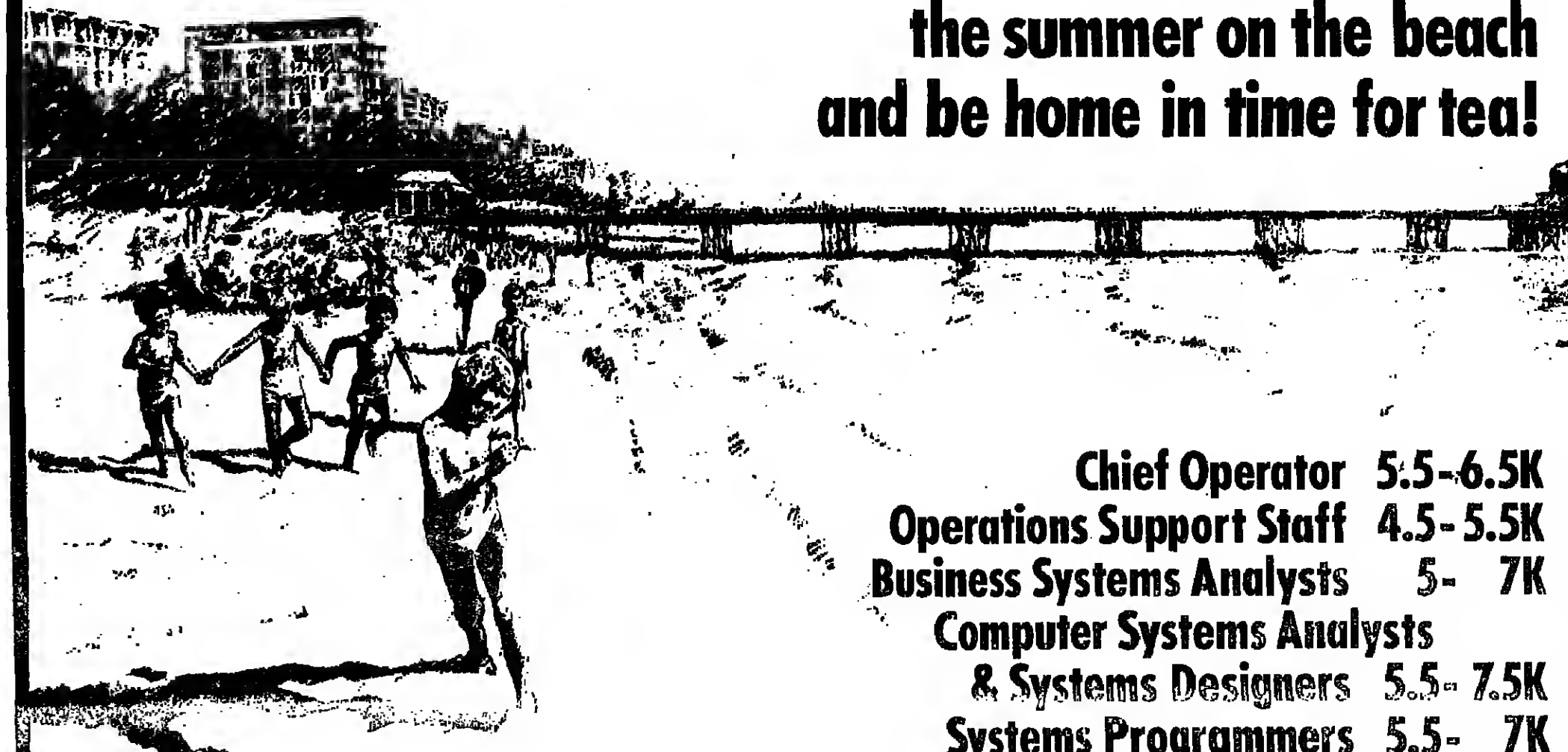
APPLICANTS should have extensive programming and application system design experience, preferably gained with a computer manufacturer, and be capable of controlling significant system development projects. The ability to effectively deal with customers and software houses whilst leading a team is imperative — as is the ability to achieve every individual aspect associated with total system development including feasibility studies, cost estimate plans and implementation. Preference will be given to applicants educated to degree standard and aged 25/35.

Write in confidence quoting CWE 148
D.H. May - Adviser to the Company

Peterson Davidson Ltd
3 Mandeville Place, Wigmore Street, London W1M 5LB 01-486 1486



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Business Systems Analysts 5-7K
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Abbey Life's planned expansion is ambitious. We have a strategic plan looking into the next 5 years which includes Data Base developments, CICS, DL/1. An IBM 3031 is on order for early 1980. At present we operate a 1 megabyte 370/148 under OS/VS1 on a 3-shift 5-day week basis, and our applications cover a wide range of life assurance, accountancy and information systems. Our prime programming language is COBOL supported by Assembler and Fortran; we use DATAMANAGER and TESTMANAGER for development work.

To continue the achievement of our long-term plans, we put great emphasis on the career development and training of our staff and on the recruitment of

data processing professionals who wish to extend their expertise.

The vacancies result from our expansion plans and are in addition to the staff we recruited from our September recruitment campaign.

Salaries are competitive and there is a substantial package of additional benefits. These include:

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Assistance with relocation,
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Free Life Assurance,
Subsidised restaurant,
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The Company operates flex-time, has first class working conditions in a modern environment, and an active sports and social club.

Interviews will be held in Bournemouth or London. For further details about data processing in Abbey Life and to obtain an application form—

Telephone Barry Greenwood during normal office hours on Bournemouth (0202) 292373, extension 4444.

Outside normal working hours telephone Terry McDowell on Christchurch (02015) 77618 for details of the Operations vacancies, and Barry Greenwood on Bournemouth (0202) 761983 for details of all other vacancies.

Write to Barry Greenwood at Systems Administration Department

Abbey Life
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Basic salary is good and benefits include London Weighting, Bonus/Productivity Scheme, subsidised canteen, contributory pension scheme, and excellent sports and social facilities.

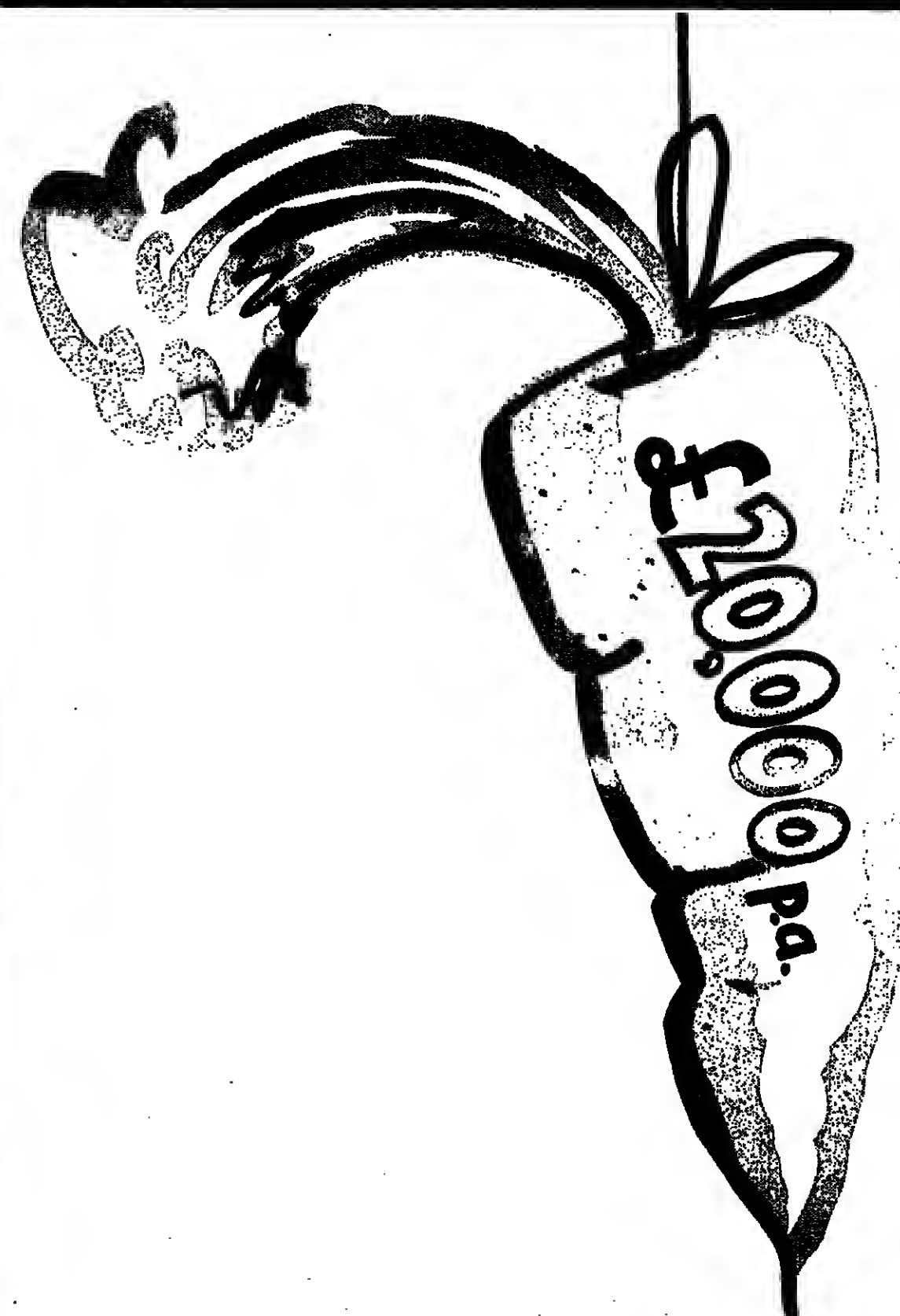
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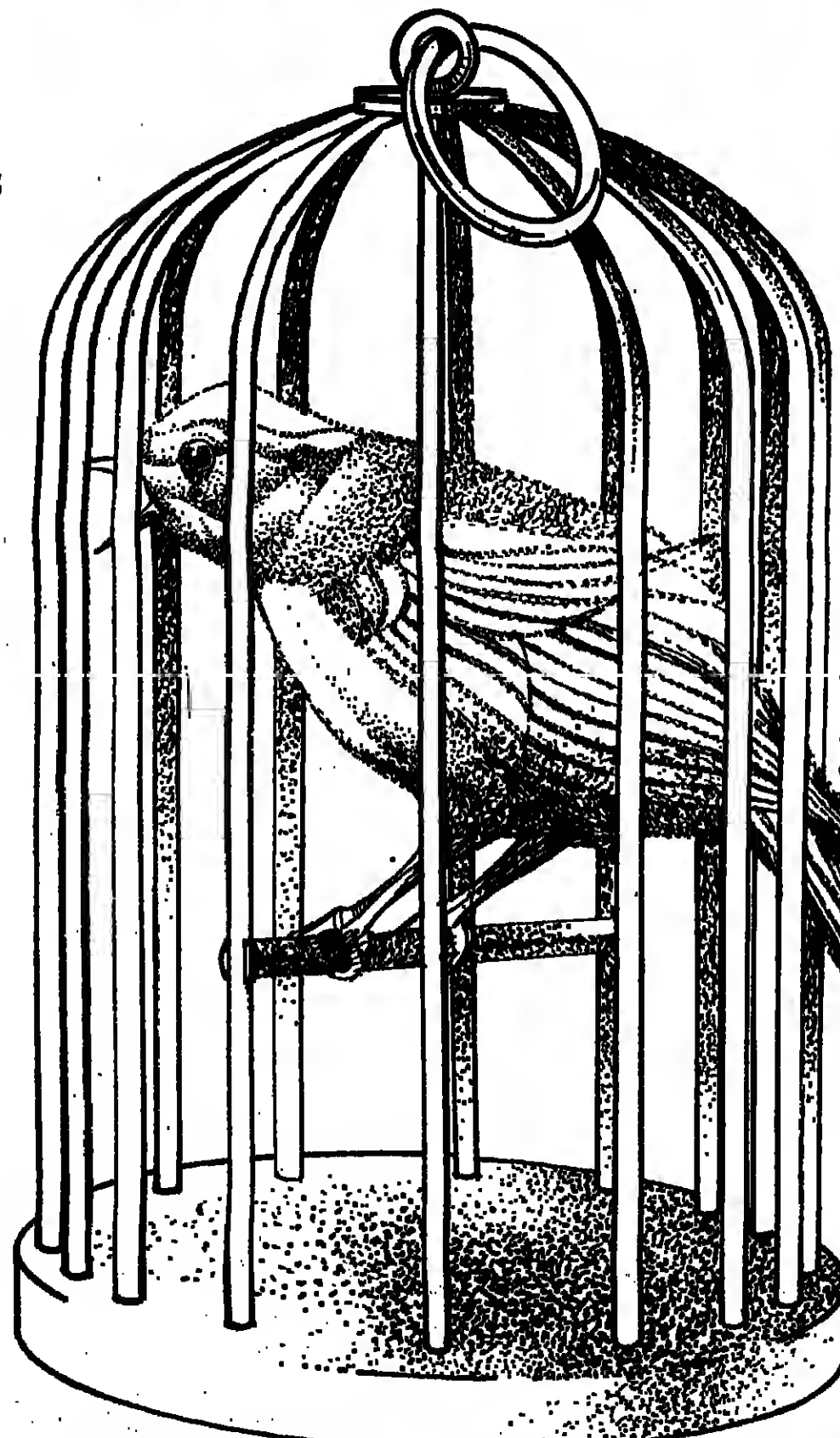
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1978 was another extremely successful year for ICL, turnover was up by 22% to over £500m, with over half the business coming from overseas.

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**£4000-£8000
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- ICL 1900 or 2900 COBOL
- George III, VME/B
- IDMS
- Real-time systems
- Production and Manufacturing systems
- Marketing and Finance systems
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The openings are based at Letchworth and Stevenage (Herts), Winsford (Cheshire), West Gorton (Manchester), Kildgrove (Staffs) and Putney (London).

We will be holding interviews over the next two weeks so write now giving brief career details to: George Battersby, ICL Recruitment Services, 93/99 Upper Richmond Road, London SW15, or if you require further information telephone him on 01-788 7272 Ext. 4179. Please quote reference CW1198.

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AREA: Greater London

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OPPORTUNITY: The U.K. Division of this multi-million dollar American company is small but established, and with sales at an unprecedented high, they expect to double in size within five years. Thus career progression is virtually guaranteed.

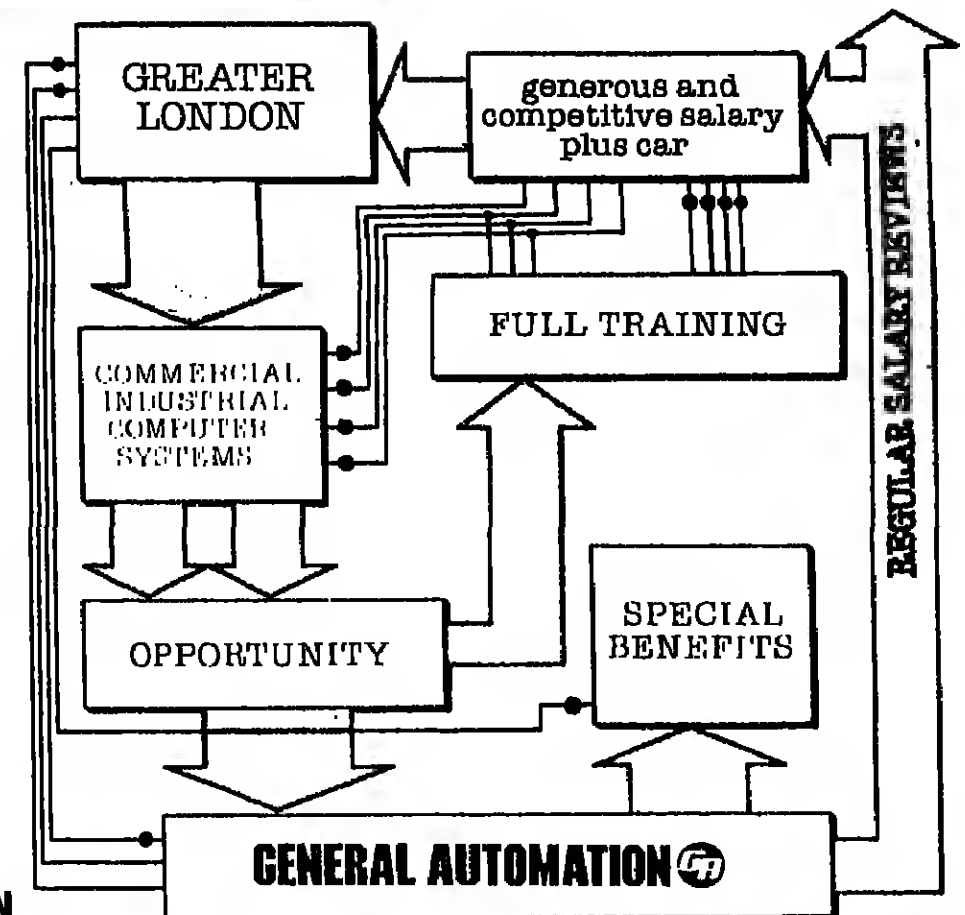
TRAINING: Full training will be provided at the company's European Training School on a regular basis.

FORWARD-LOOKING COMPANY: The company manufacture powerful mini and micro computers for industrial/commercial use. Their success has resulted in over 18,000 systems installed worldwide. Always at the forefront of technological advances, their activities are constantly highlighted in the International and Trade press.

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Location Central London c£9k

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Gresham Executive Appointments

O.E.M. SALES-WORD PROCESSING

London U.K. c£10.5k + Car

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As part of the company's tremendous growth last year they have created this new position to further develop their market share.

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£7,500+ GUILDFORD

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A degree and five years' commercial analysis experience will be required to qualify for this senior position in a dynamic and well-managed company.

Write, in the first instance, to Robert G. J. Wood, MA, who is advising personally on this appointment to: Microstar Limited, Highbury House, 87 Portsmouth Road, Guildford, Surrey GU1 2DL. Telephone Guildford (0483) 33031.

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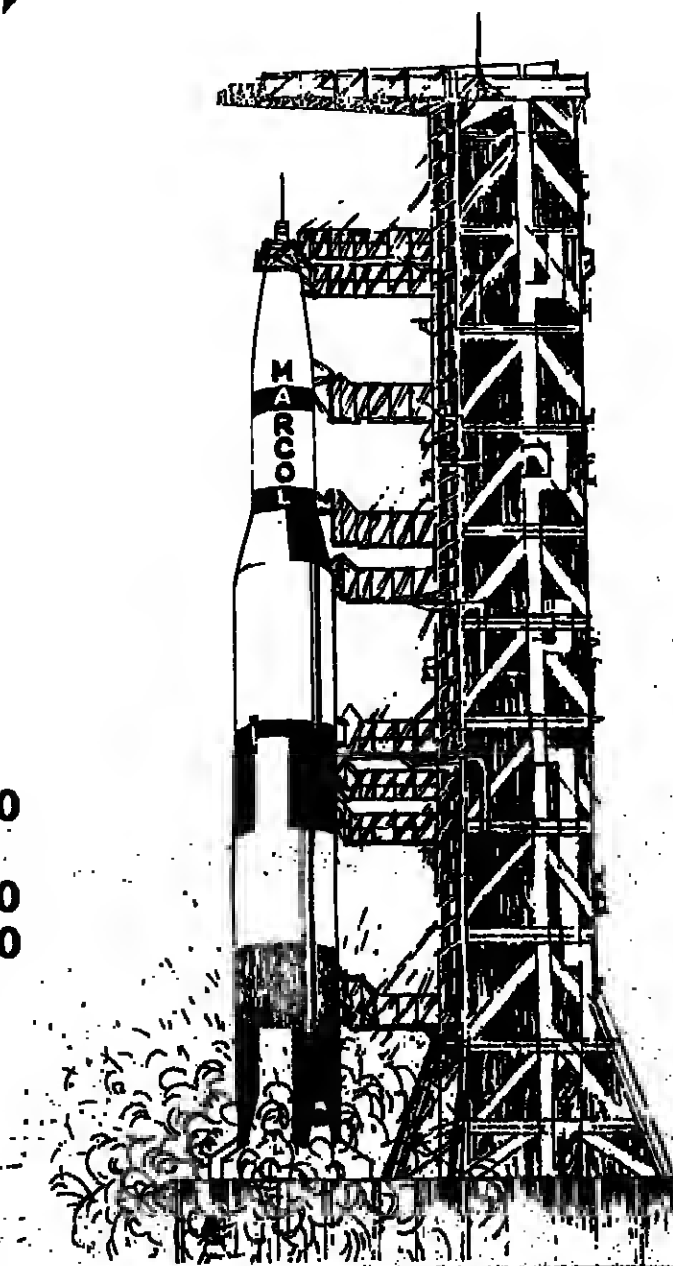
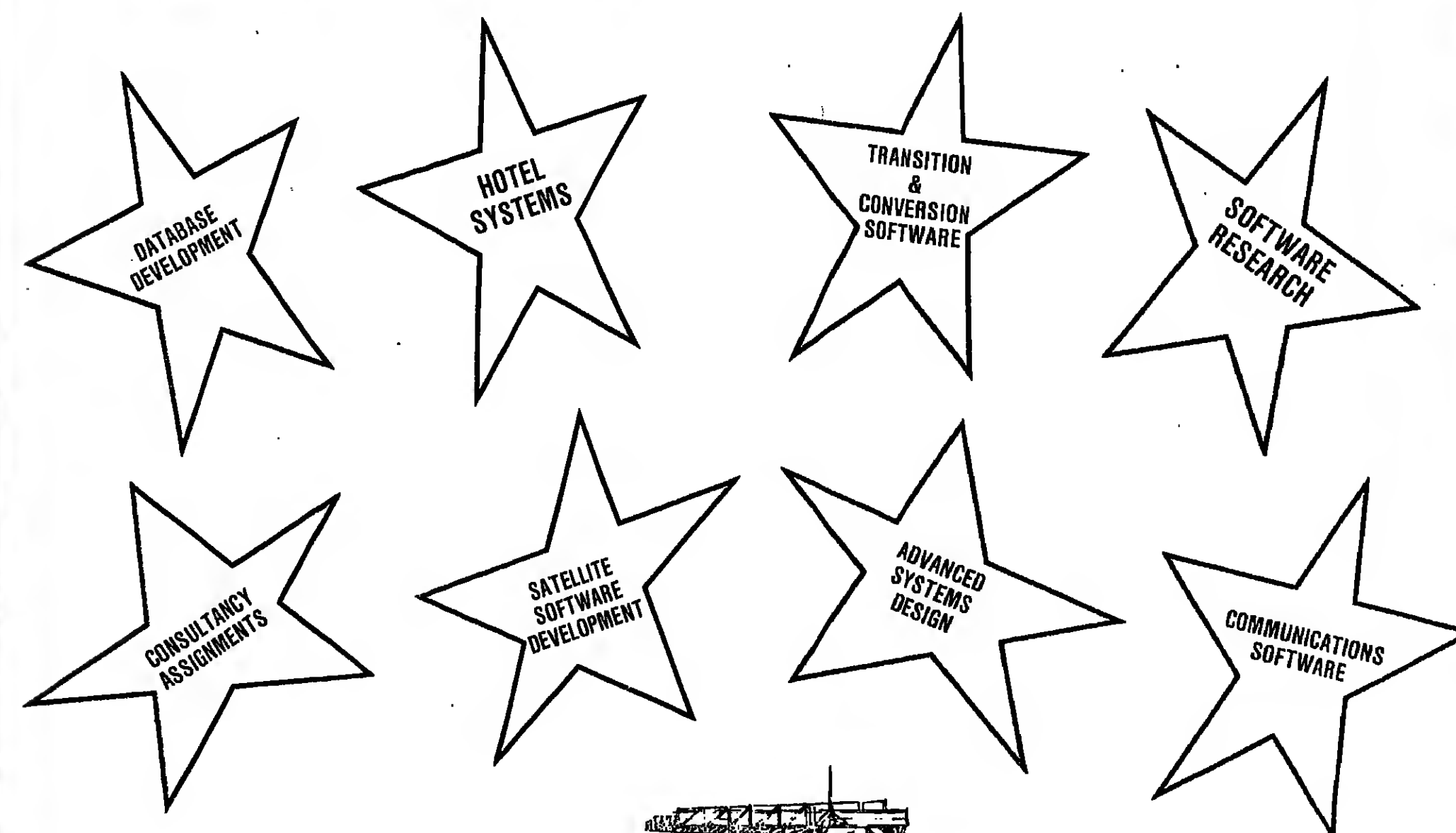
QUALIFICATIONS:

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For further information contact:

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Manager
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Anglo House
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Edinburgh EH2 2JR
Tel: 031 226 6361 (reverse charges)

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| 12. SALES BACKING OF — Seminars, Exhibitions, Mail Shots, Advertising, Installation, Support | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. TERRITORY — City-based — Central London — and Large Bucks.-based — Home Counties — and Large | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. RESTRICTIONS — No Named Accounts, No Vocational Limits | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. ACTION — Phone to discuss and fix interview. Ref. MMH. | <input type="checkbox"/> | <input type="checkbox"/> |



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3 YEARS' EXPERIENCE B1700/B1800
Some experience in the use of DMS II
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Capable of installing B1800 with minimum technical advice
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B80/B800

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The positions are permanent and include benefits such as:

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Plant Protection Division

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SALES EXECUTIVE — £12K

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- up to £12K remuneration package
- a company car
- opportunity to travel abroad
- a unique product which is achieving world wide acceptance

LECTURER/CONSULTANT — £8K

To teach the theory and the practice of Infotech Design Technology, to provide on-site support to users of the technology, and to develop new ideas that will keep Infotech and yourself ahead of the rest. Programming experience is essential, knowledge of data structured design methods would be an advantage.

- up to £8K salary
- opportunity to travel abroad
- exposure to a variety of customers and applications

Infotech Design Technology ensures that its staff achieve the right systems and programs for their needs, on time, every time. This methodology results in:

- systems and programs that work first time
- accurate documentation
- precise project control
- easier maintenance
- flexibility in allocating staff
- language and hardware independence

Both of these positions are based in Maidenhead, an attractive residential area on the Thames, within easy reach of London via the M4 or British Rail. The future with Infotech is limited only by your own imagination. Telephone Mayer Wahlman on 06281 35031 to discuss how you and Infotech can work together.



IML Infotech Methods Limited
Nicholson House, Maidenhead, Berkshire SL6 1LD England. Telephone Maidenhead (0628) 35031 Telex 847319

Systems Co-ordinator

Central Lancashire, to £7,000

A subsidiary of a major British group, our client manufactures and markets capital equipment for use in breweries, dairies and related industries. The company, which will install a computer later in the year, is undertaking a comprehensive review of its operational systems and has created this new position in co-ordinate the design, development and implementation of the new systems. Reporting to the Managing Director, the Systems Co-ordinator will liaise with outside consultants and bureaux, and with the departments concerned, to ensure the success of this exercise. Additional responsibility will be for the installation of the hardware. Applicants, probably around 30, will have at least three years' experience of systems design, and will have had total responsibility for the design and implementation of a major system.

C.G. Moores, Ref: 24150/CW
Male or female candidates should telephone in confidence for a Personal History Form to:
MANCHESTER: 061-236-8081, Sun Life House, 3 Charlotte Street, M1 4HB

Hoggett Bowers
Executive Selection Consultants
BIRMINGHAM, CARDIFF, GLASGOW, LEEDS, LONDON, MANCHESTER, NEWCASTLE and SHEFFIELD

A CAREER IN INTERNATIONAL BANKING

The Environment

Chemical Bank is one of the largest banking groups in the world. Within the European area of the International Bank division a systems group has designed and implemented integrated real-time banking systems in seven locations. Further applications are under development to enhance and complement the existing systems which run on the DEC PDP11 range. Systems are developed and maintained by self-contained project teams working to closely defined procedures. Considerable opportunity exists for career development in an exciting and dynamic working environment.

The Benefits

In addition to the substantial salaries there is a generous package of benefits:

- Subsidised mortgage schemes
- Non-contributory pension
- Profit sharing
- Free life assurance
- Free lunches
- Personal loans
- Interest-free season ticket loans

The Positions

The following positions will appeal to those with a good educational background and mini-computer experience who can demonstrate a professional approach and are prepared to undertake extensive travel within Europe at the Bank's expense.

Senior Programmer Analyst Salary circa £8250

- * At least two years' experience in structured system design.
- * A solid programming background.
- * Financial or banking systems experience essential.
- * Supervisory experience.

Programmer Analyst Salary circa £7500

- * At least three years' programming experience.
- * One year of structured system design.
- * Financial or banking system experience preferred.

Programmer Salary circa £5500

- * Minimum two years' programming experience.
- * Experience in BASIC an advantage.

For further details please write or telephone Mark Irens. All applications will be treated in the strictest confidence.

Reference CW 419/1

HUTTON EXECUTIVE SELECTION LTD.
HUTTON HOUSE,
HUTTON STREET, LONDON EC4Y 8HR

TELEPHONE: 01-353 7141 (24 HOURS)

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

Marketing Specialists

Central London based with some European travel
Salary package circa £10000

Our Clients enjoy one of the best reputations in the world for marketing and training resources. Enhancement of the U.K. Marketing Department has created two further vacancies.

Product Specialist

To take responsibility for the marketing of a specific product. The job includes pricing, stocking, configuring, creation of literature and sales aids, training, liaison with the Company's European Headquarters, support at large sales negotiations, presentations, analysis of competition and general support at a senior level.

Candidates should have a good knowledge of applications software and operating systems and an appreciation of hardware technicalities and COMOL.

Application Specialist

To control specific applications areas relating to Trade and Industry and in particular such areas as depot accounting and other distributed data processing applications.

The job involves researching specific applications areas, helping to create packages, planning sales campaigns, training, running sales workshops together with product specialists, supporting large sales negotiations, and generally offering troubleshooting and support back-up at a senior level. Applicants to the job will clearly identify closely with this specification and have the necessary experience upon which to draw.

Applicants to both positions could come from a variety of backgrounds such as sales, marketing, support, software house, large commercial I.T. user etc. Preferred but not essential is an age group of between 28 and 35 and an education to Degree or equivalent.

These are two first class opportunities and interested applicants should contact BOB BOWER Advising Director to arrange an early interview.

Reference CW/219/2

HUTTON EXECUTIVE SELECTION LTD.
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HUTTON STREET, LONDON EC4Y 8HR

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London, Midlands, The North, The West
Salaries to £8,000 Quota Earnings £20,000

We have been instructed by our Clients to identify the really top-class sales executives of 1978 whose ambition should lead them to even greater things (earnings, responsibilities, benefits etc.) in 1979.

You may not be considering moving from your present company at this time but we would still like to know about you if you are doing well.

You should know exactly what the opportunities are at the moment and we should certainly know if your success and ambition could lead to a better job, either now or later.

Make certain that we know about you by contacting Mark Irens to arrange a meeting anytime between 8 a.m. and 6 p.m.

Reference CW/219/4

HUTTON EXECUTIVE SELECTION LTD.
HUTTON HOUSE,
HUTTON STREET, LONDON EC4Y 8HR

TELEPHONE: 01-353 7141 (24 HOURS)

Hutton
SPECIALIST RECRUITMENT CONSULTANTS

THORBAR

RECRUITMENT AND CONSULTANCY SERVICES LIMITED

Greenock House 19 Cuckfield Road Hurstpierpoint Sussex

Telephone 0273 833848

Ref. CW/6/79

SPECIALISTS IN DP AND EXECUTIVE RECRUITMENT

CAREER-MINDED PROGRAMMERS MOVE ON!—MOVE UP!

Our client operates in a highly user-orientated environment providing sophisticated packaged solutions tailored to meet individual needs. At present they have an ICL mainframe but have recently completed a major review of their computing needs and, in consequence, are planning a replacement within the next few months to provide much increased central processing power. Other developments include the further development of on-line communications facilities with a network and mini computers providing distributed intelligence at remote centres. In preparation for the introduction of the new equipment a number of additional Programmers of varying experience are to be recruited.

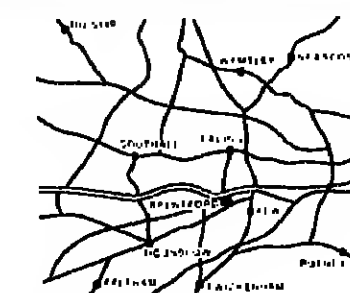
PROGRAMMERS c £4,600

- Up to 18 months solid programming experience required
- Cobol preferred but Fortran or any assembler acceptable
- Any hardware, mainframe or mini
- Commercially orientated
- Knowledge of or exposed to structured programming techniques an advantage
- 'A' level or equivalent education desirable

JUNIOR PROGRAMMERS c £4,000

- Ideally with 6/12 months' practical programming experience preferred
- Computer Science Graduate acceptable, especially those with industrial experience
- Retraining to Cobol provided in appropriate cases
- Any hardware
- Commercial awareness useful

PLEASE WRITE OR TELEPHONE NOW TO MAKE IMMEDIATE ARRANGEMENTS FOR INTERVIEWS TO TAKE PLACE IN LONDON OR THE SOUTH — OR IF MORE CONVENIENT TELEPHONE JACK COLLINGS BETWEEN 7 P.M. and 9 P.M. WEEKDAYS OR WEEKENDS ON (0273) 400880



EUROPE'S LEADING SPECIALIST RECRUITMENT CONSULTANTS

CHIEF PROGRAMMER SAUDI ARABIA

around £14,000 TAX-FREE renewable contract

+ COMPANY CAR + TERMINAL BONUS + SCHOOLING ALLOWANCES
+ FULLY FURNISHED FLAT (married/single) + FREE UTILITIES

THIS OUTSTANDING PACKAGE offers the opportunity to make considerable savings while working on fourth generation equipment.

OUR CLIENT is a national bank, which has recently installed an NCR Criterion mainframe after undertaking a thorough feasibility study. Further computers will subsequently be installed. The O.P. Department has been established with U.K. staff, but the post of Chief Programmer remains vacant.

ENVIRONMENT. The country is politically stable and the economy very strong. The climate is hot, but air-conditioning is normal. While facilities are limited, such sports as fishing, swimming and riding are available, and there is scope for adaptable individuals to enjoy an active social life within the large expatriate community.

A SELF-CONTAINED FLAT is provided, this being furnished to a high standard (including freezer, cooker, linen and cutlery).

GENEROUS SCHOOLING ALLOWANCES are given, a local English school offering good education up to the age of eleven.

RESPONSIBILITIES:

All aspects of the supervision of a team of five experienced programmers and several locally recruited trainees.

REQUIRED PROFILE:

1. Minimum of 7 years' programming including good COBOL, utilising advanced operating systems
2. Experience of leading a programming team
3. Knowledge of on-line systems

WE WOULD ALSO be interested in talking to candidates for the post of Senior Programmer.

Salaries are reviewed annually.

PLEASE TELEPHONE without delay on 01-540 8311. OPSC Group Ltd., Crown House, Morden, Surrey.

Crown House Morden London SM4 5EU
consultancy division
01-540 8311



24-hour answering service

Ref. CW943

Handwritten signature or initials in a box.

KNIGHT PROGRAMMING SUPPORT LIMITED



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★ High remuneration assured throughout the year

★ Security of employment from continuity of work

★ Career development from learning new DP techniques

★ Overseas opportunities

★ Financial advice in all matters of taxation, mortgages, pensions

PERMANENT NORTHERN OPPORTUNITIES

COBOL and SYSTEMS PROGRAMMERS

LEEDS to £5712

A lucrative self-financing productivity payment is offered by our client. They are now operating ICL 1900's under GEORGE 3 and are installing a 2972 and 2900 to be run under VMEB. Our client requires programmers with COBOL experience, also systems programmers for a technical support team.
Ref: 1071 and 1075

IBM PROGRAMMER

NORTHWEST c.£5000

Our client, a company situated on the Lancashire coastline, are building a new plant. Due to this expansion they require programmers with a minimum of two years COBOL. Experience of CICS and DATA BASE PL1 would be an advantage. Work involves varied commercial applications.
Ref: 1064

SENIOR SYSTEMS ANALYSTS

NORTHWEST to £6237

The company are at present on overloaded 1904s and are converting to a 2972 and a further 2900 is to be installed, that will run under VMEB. Analysts are needed immediately on the investigation design and specification for new applications and for further developments of existing system. Lucrative company benefits offered.
Ref: 1074

PROGRAMMER

LIVERPOOL to £6000

Benefits from this company include an annual bonus, a non-contributory pension scheme, flexi time and luncheon vouchers. ICL 2904, COBOL and EXEC 2 experience would be a definite advantage. Other company hardware includes IBM and HONEYWELL.
Ref: 1063

SYSTEMS ANALYSTS

YORKSHIRE to £6000

Our client, a rapidly expanding young company, offer a 10% to 15% bonus plus a company car or generous car allowance, DEC PDP 11 experience and knowledge of BASIC+ and RSTS is preferred. Each analyst has a portfolio of client who he deals with specifically from feasibility to implementation.
Ref: 1048.

PROGRAMMER

LANCS to £5000

Our client, an expanding company offer to employees a 3 1/2% mortgage interest rate and a productivity bonus. Programmers with an IBM background and experience of ASSEMBLER or PL1 are required. A VM/CMF interactive programming systems operation where programmers use the computer terminals.
Ref: 1057

FOR DETAILS OF THESE AND OTHER VACANCIES PLEASE CONTACT
JOAN JOHNSTONE, 143/144 ROYAL EXCHANGE MANCHESTER. TEL.
NO. 061 833 9341/5.

COMPUTER PERSONNEL CONSULTANTS

Senior Computer Operator

Candidates for this job should be at Operator or Senior Operator level and should have at least 2 years 1900 range and GEORGE 3 experience. A proven high level of understanding of G3 is required.

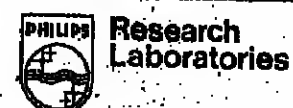
The Laboratory at present runs a 256K ICL 1904S for scientific research work, using both MOP and background. As well as the terminal configuration, a network of mini computers is connected to the 1904S.

In the near future a second 1904S will be added, accessing the same file store.

by use of a special version of GEORGE 3. Working hours are evenly split between 8.30 - 18.30 and 14.00 - 22.00 Monday to Friday.

The Laboratory is housed in modern buildings in pleasant surroundings and offers benefits including subsidised canteen, sports and social club and staff shop.

Men or women should apply, quoting reference 129 to M. L. Melpace, Personnel Manager, Philips Research Laboratories, Cross Oak Lane, Salford, Nr. Radcliffe, Surrey.



PHILIPS

Programming ... West Germany ... and £10,000-£12,000 p.a.

An international opportunity for talented programmers

Sandvik GmbH, Düsseldorf, is the German sister company of Sandvik U.K. Limited and part of the international Swedish group engaged in a wide range of engineering activities.

The appointment of a Programmer in Düsseldorf offers an outstanding career opportunity for either a young high-flyer or a more experienced person with real talent to progress within the framework of the Sandvik organization. The hardware is an IBM 370/158 with a disc operating system, and work involves EDP applications in the commercial range including financial and cost accounting, together with order processing, despatch and invoicing.

Candidates must have a sound knowledge of COBOL and IBM (CICS) experience would be useful. Whilst a working knowledge of German would be an added advantage, it is not essential providing candidates are willing to learn sufficiently.

Salary will be equivalent to £10,000-£12,000 p.a. and additional benefits, which are those expected of a major international group, include generous assistance with relocation expenses. An initial interview will be held in the UK at Sandvik (Halesowen), please write or telephone for an application form in the first instance to:

David Davis, Personnel Manager, Sandvik U.K. Limited, Manor Way, Halesowen, West Midlands B63 2DZ. Telephone: 021-560 4700.

SANDVIK

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is not just a famous name it's:

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Noble Lowndes
and Partners Ltd.

ANALYSTS to £6500 PROGRAMMERS c. £5000

A successful past leads to a successful future

For more than 40 years Noble Lowndes and Partners have been pioneers and market leaders in their field. Computing has played an integral part since 1959. Analysts and Programmers joining this installation will therefore have the security of working for a highly successful organisation and the interest that the future will bring through the company's determination to stay ahead.

Currently the DP department, which is based in Croydon, is small but utilising large IBM 370 hardware operating under MVS. Current plans include the introduction of distributed processing, database systems, and word processing.

Analysts should have a broad commercial background. Training will be provided in specific technology and applications.

Programmers should have a good COBOL background. IBM knowledge would be valuable but not essential. On-line program development is utilised.

The essential for both analysts and programmers is the desire to build a career with the company and to work in a growing department. The opportunities are there — maybe you should be too!

Initial applications should be made by telephone or in writing to Capp Associates CROYDON office. Starting salaries will be as shown and benefits are good.

Positions open to male & female applicants, please telephone (24 hour service) for initial discussion or write to address below. QUOTE REF. CW 107.9H.

Please note new address - same phone number

COMPUTER AND
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MYRIAD

INTERNATIONAL SYSTEMS IN CENTRAL LONDON OILFIELD SERVICE INDUSTRY

ANALYST/PROGRAMMER—MINIS To £6500

This position requires an enthusiastic person, with drive and good communicative skills, to be responsible for the design and subsequent implementation of a major, international system. Joining the 'mini' division in a senior capacity, the successful applicant will have developed systems in a small machine environment (RPG II will be an advantage but is not essential) and will possess proven analysis experience. A variety of systems are being developed and will be implemented initially at sites in Europe.

The possibility of a world-wide network based on IBM System 34 equipment is now being considered and for this reason candidates must be prepared to work abroad occasionally for periods of three to four months.

The mainframe division requires an Analyst/Programmer to develop sophisticated management accounting systems. COBOL Programmers will also be considered for this position and the salary will be c.£6000 depending upon experience.

The company is based in Central London and is within one mile of four British Rail main stations. A season ticket loan is provided along with LVs, 4 weeks' holiday and a first-class NON-CONTRIBUTORY PENSION SCHEME.

Ref. S2/2601

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Ferranti success creating career opportunities

PROCESS CONTROL SOFTWARE DEVELOPMENT

South Manchester

Since 1982 the Wythenshawe Division of Ferranti Computer Systems Limited has been a leader in the field of process management and control. During this period of time, the company has developed a set of software packages which provide building blocks for complex and powerful process control and management systems. This Process Management Software (PMS) therefore enables easier, faster and more secure development of applications with easier enhancement thereafter. The success of PMS has created a need for further development, to cope with the increasing complexity of these systems. Thus several additional staff are now required, as detailed below.

The work involved varies with seniority but encompasses the following functions:

- * Detailed design of system modules from broad specifications.
 - * Programming and testing modules using Corel 66.
 - * Assembling and testing individual systems, to the requirements of end user clients and in house project teams.
 - * Providing 'pre sales' support to Ferranti sales teams.
 - * Providing 'after sales' support to clients and Ferranti project teams.
- For experienced staff, these opportunities offer the chance to do some rewarding creative work; less experienced staff can learn a considerable amount about process control systems.

The offices are located on the Southern boundary of Manchester, in pleasant and rural surroundings. Assistance with relocation is available where necessary, and the usual large company benefits apply. Please apply to Sampson Staff in the first instance, either by telephone (transfer charges if necessary), or letter. Initial interviews will be held in Manchester or London.

Sampson Staff 15 Piccadilly, Manchester M1 1LT. Tel: 061-832 4184.
Evenings and Weekends - Tottington (020488) 2545.

System Designers/Senior Programmers

- * A minimum of 2 years experience in process control.
- * A desire to use this experience in the design of standard process management software.

Programmers

- * Ideally, 12 months or more experience of programming real time minis, but new graduates in computing, mathematics, or related disciplines are also of interest.

Technical Author

- * A desire to document standard software of a real time nature.
- * Previous experience in software or technical writing.

COMPUTER AUDITOR

Staff a company with a leading reputation in the field of process management and control. The company is seeking a person to work for an international company with a view to working in the UK.

ANAL/PROG

Two years experience in process management and control systems. The candidate should have a good knowledge of process control systems and be able to work in a team.

SENIOR PROG

Well experienced with 3 years COBOL and good knowledge of process management systems. The candidate should have a good knowledge of process control systems and be able to work in a team.

SYSTEMS ENGINEER

Well experienced with 3 years COBOL and good knowledge of process management systems. The candidate should have a good knowledge of process control systems and be able to work in a team.

168 Finchley Road, London, NW3 3HP

GHANA

Asst. Mgt. Officer, Corporation (Ghana) Ltd.

COMPUTER MANAGER

c. £16,000

A Manager is required for the installation and maintenance of computer systems in Ghana. The post holder will be responsible for the installation and maintenance of computer systems in Ghana. The post holder will be responsible for the installation and maintenance of computer systems in Ghana.

The successful candidate will be responsible for the installation and maintenance of computer systems in Ghana. The post holder will be responsible for the installation and maintenance of computer systems in Ghana. The post holder will be responsible for the installation and maintenance of computer systems in Ghana.

This contract is for a period of 12 months, which may be extended by agreement. The post holder will be responsible for the installation and maintenance of computer systems in Ghana. The post holder will be responsible for the installation and maintenance of computer systems in Ghana.

Please write with a resume, quoting Ref. WJ 15, to: A. Orchard, Group Personnel Manager, LONRHO LIMITED, Cheapside House, 138 Cheapside, London EC2V 6BL.

SALES ENGINEER COMPUTER SERVICES

Applicants are invited to fill this new position created as a result of our further expansion. We are looking for someone who has already gained experience in selling in the Computer Services Sector and wishes to join a successful international group whose activities are totally related to selling third party computer hardware maintenance to manufacturers O.E.M.'s and End Users.

The successful applicant will join a small, dedicated team operating from our Head Office in Feltham, Middlesex and must be willing to travel throughout the U.K., and occasionally overseas.

An attractive salary will be negotiated and a contributory Pension Fund is in operation. Company car will be supplied for your full time use.

Please write giving full details of your career, marking your application Private and Confidential to: The European Marketing Manager, Systems Maintenance and Services Limited, P.O. Box 13, Unit Centre, Great South West Road, FELTHAM, Middlesex, TW14 6NT.

NO IFs, BUTs or MAYBEs!

You can earn c.£12,500+ car

SALES EXECUTIVES

We are recruiting for an exciting and well established International Organisation who are currently offering a wide range of competitive products with the emphasis on intelligent terminals and network processors. Their products offer excellent price performance ratios and are enjoying considerable success in this expanding market place. Excellent technical support backed by strategic marketing

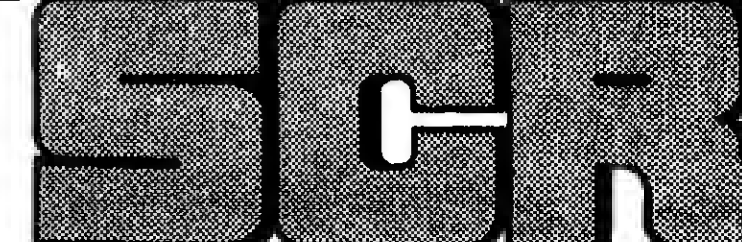
means that their realistic sales quotas are readily exceeded. Vacancies exist in the North-West of England based on their Manchester office, although territories range from Merseyside to Leeds.

For further details of these challenging and rewarding positions contact (in strictest confidence)

David G. Wade ON: 061-833 0427 OR: 0785-56013 after 7.30 p.m.



SPECIALIST COMPUTER RECRUITMENT LIMITED



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Freeport, Equity and Law House,
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MANCHESTER 061-833 0427
Freeport, Blackfriars House, The Paragon, Manchester M3 8BB
LONDON 01-935 0671
Freeport 13, 3 Mandeville Place,
Wigmore Street, London W1M 6LS

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£5,000-£7,500 plus car scheme
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We have vacancies in our Membership and Sales Division for computer professionals at our Regional Offices in London, Manchester, Bristol and Birmingham.

You will be required to be responsible for a territory and visit NCC member firms and others to promote NCC's Services and Products covering Software, Information, Training and Membership.

We are looking for marketing experience and a sound background of

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Starting salaries will be dependent on experience and location in the range £5,000 - £7,500 (within a range rising currently to £8,400).

Conditions of Service are excellent and include a car scheme, 22 or 25 days annual leave (plus 10 statutory holidays), contributory pension and life assurance schemes. Assistance with re-location

expenses where appropriate.

Please write with full career details to: Personnel Manager, The National Computing Centre Ltd., Oxford Road, Manchester M1 7ED (or telephone 061-228-6333 for an application form)

NCC
The National Computing Centre

unilever research Research Assistant

We have a vacancy for a chemistry graduate in our Confectionery Fats Section:-

Tasks:

To assist a scientist in a number of projects in the confectionery fats field involving chemical techniques, blend formulation, computer modelling and general calculations. The job also covers the fields of product formulation and assessment.

Qualifications:

Candidates should have a B.Sc (Hons) degree in chemistry or equivalent and also possess a good knowledge of mathematics. Experience in computer programming would be beneficial. An ability to type would also be an advantage.

Colworth Laboratory

A good starting salary dependent on qualifications and experience and other Unilever benefits of employment will be offered to the successful candidate.

Please write giving details of career history and quoting reference number CH-480A to:

Miss J. Kenny,
Recruitment and Career
Development Manager,
Unilever Research, Colworth Laboratory,
Unilever UK Central Resources Ltd.,
Colworth House, Sharnbrook,
Bedford, MK44 1LQ.

Teleprocessing Specialist

Salary Scale £6,773-£7,223 per annum

Required for our offices in E.C.1.

This post calls for experience in IBM Basic Assembler Language coupled with a knowledge of teleprocessing and telecommunications as applicable to a computer environment. The successful candidate will be responsible for the maintenance and further development of an already extensive teleprocessing network and advising on all aspects of communications hardware and software.

We operate two IBM 370/148 computers connected to a large teleprocessing network. Interesting developments in this network are in hand involving the evaluation of IBM's Series/1 and similar equipment.

The software environment is DOS/VS and VM, utilising CMS for on-line program development. Batch work is handled by Information MARK IV.

Generous holidays - Staff restaurant - Flexitime.

If interested, write to Mr. Ben Wilson on 01-837 3300, Ext. 2350/2351 for further leaflets and an application form, or simply send a concise detail of your qualifications and career to date and quoting reference CW 101 to: Mr. C. Wilson, F.I.C.E., F.I.Mech.E., F.I.V.E.S., Divisional Manager, Room 650, 73 Rosebery Avenue, London, EC1R 4TP.

This post is open to male and female applicants.

Thames Water

City to £7500 + Mortgage

A large City-based bank is seeking Analyst/Programmers with 18 months' plus RPG II experience, including some Analysis.

The Company runs an IBM SYSTEM 34, and experience on this machinery or on IBM SYSTEM 3 or 32 will be of interest.

The work is totally development, and the package includes Non-Contributory Pension, Free Medical and Life Insurance, and Subsidised Mortgages.

Reference PG 4/1

COBOL & PL1 PROGRAMMERS

West End to CE5750

This international petro-engineering company runs an IBM 370/168 installation under OS, and requires PL1 & COBOL Programmers with around 18 months' experience. Progress into Analysis may be assumed, and any current experience here will be utilised at once.

The company operates a Flexi-time system, and can offer excellent career prospects, in terms of both experience and responsibility.

Reference PG 4/2

PL1 PROGRAMMER/ANALYSTS

N. London & Kent from CE5500 + Mortgage

Two major companies, one financial and one in the computer electronics field require PL1 Programmers of all levels to do development work on their range of large 370's.

At least 1 year's experience is needed, with Senior people also required at suitably higher salary levels. Career prospects at both companies are first class, and benefits include LV's/Free Meals, Flexi-time, Cheap Loan & Mortgage Schemes, and possible Relocation Assistance.

Reference PG 4/3

Junior and senior operators with a minimum of 6 months' experience on any mainframe required urgently. Listed below is a small selection of current vacancies.

IBM	OS	S/LOR	4YRS	£6000
IBM	OS	SNR OP	2YRS	£5600
IBM	OS	OPERATOR	1YR	£4300
IBM	OS	OPS SPT	1YR	£4000
IBM	OOS	SNR OP	2YRS	£4600
IBM	OOS	OPERATOR	8MTHS	£4000
ICL	GII	SNR OP	2YRS	£4600
ICL	GII	OPERATOR	8MTHS	£3600
ICL	GII	OPERATOR	18MTHS	£4500
ICL	ANY	OPERATOR	8MTHS	£3600
HWELL	GCOS	JNR OP	6MTHS	£3600
HWELL	GCOS	SNR OP	2YRS	£5000
UNIVAC	90/60	OPERATOR	1YRS	£4600
UNIVAC	90/40	OPERATOR	8MTHS	£4400
UNIVAC	90/30	SNR OP	2YRS	£4600
UNIVAC	1108	OPERATOR	1YRS	£4600
NCR	261/B3	JNR OP	6MTHS	£4000
BURROUGHS	MCP	JNR OP	6MTHS	£3700

DATA CONTROLLERS

IBM	OS	8MTHS+	City	£3000+
IBM	OS	2YRS	Various	£2000
ICL	GII+	1YR+	London	£3200+
BURROUGHS	MCP	1YR	City	£3600

City CE8000

A very large international engineering company have decided to expand their D.P. unit and branch into the commercial field. The person they are seeking should have at least 4 years' experience in Systems Analysis, and some design work. Knowledge of MINI's would be an advantage but is not essential. The company offers an excellent salary with all company fringe benefits.

Reference HK 4/4

PDP 11 PROGRAMMERS

All areas to CE7000

If you have had at least 1 year's experience of programming on PDP 11's we have many vacancies which will be of interest.

Your experience should include programming in either BASIC + /BASIC + 2 ASSEMBLER or FORTRAN under RSTS, RSX11 etc.

Applications very from highly technical to commercial and telecommunications.

All positions offer excellent salaries combined with the opportunity to progress in your particular field.

Reference HK 4/5

FORTRAN PROGRAMMERS

City £4500 to £6500

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A minimum of 12 months' Fortran experience is required and any knowledge of graphics would be an advantage.

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Reference HK 4/6

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For further information about any of the above vacancies please write to Chris Wilson or Mike Boswell.

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SYSTEMS PROGRAMMER

The Daresbury Laboratory, an establishment of the Science Research Council, situated in the north Cheshire countryside is constructing a Nuclear Structure Facility. Known as the NSF, the project is based on a tandem electrostatic accelerator which will be the largest in the world. When completed it will provide a facility of world standard which will attract users from both the national and international science communities.

The NSF machine represents a significant step forward in the technology of this type of accelerator and requires a powerful computer control and monitoring system. It is in fact the first accelerator of its type to be designed with comprehensive integral computer control.

The control system is based on a central Interdata 7/32 computer with up to 10 peripheral Interdata 7/16 computers. A vacancy exists for a Systems Programmer to join a small team of computer professionals designing and producing the software to control this network. Many problems associated with interactive colour displays, plant data handling and the operator interface, made particularly challenging by the distributed nature of the system, remain to be solved and a considerable amount of programming in both high and low level language will be required to complete the system. The post will provide a sound basis for a career in computer control systems in general.

Applicants must possess a good honours degree or equivalent and experience in systems programming. The appointment will be made either at Scientific Officer or Higher Scientific Officer level according to qualifications and experience on the following salary scales:

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The Personnel Officer

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The successful candidate will have a good knowledge of COBOL and will be able to use of packages such as SPSS, ORACLE, SAS, CUSTAN, etc. as well as basic practical techniques. Other duties will include the writing of application programs and program history maintenance.

Applicants should have a good degree, a good knowledge of applied statistics and a thorough knowledge of at least one high level language, preferably FORTRAN.

Salary on the Academic Scale: £5,000-£8,000 (under review).

Further details available from the Secretary (CVS), University of Stirling, Stirling FK9 4LA, to whom applications accompanied by a curriculum vitae and the names of 3 referees should be sent by 15th February 1979.

THE LONDON HOSPITAL MEDICAL COLLEGE UNIVERSITY OF LONDON COMPUTER PROGRAMMER

Applications are invited for the post of Programmer in the Computer Section from Programmers with at least one year's experience.

The Computer Section includes an advisory and programming service to the staff and students of the Medical College.

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Enquiries to Mr S. Evans Tel. 01-377 2688

Applications to The Secretary, The London Hospital Medical College, Turner Street, London E1 2AD giving the names of two referees.

UNIVERSITY OF STRATHCLYDE Applications are invited for the post of

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has a wide range of computer facilities including OL 15045 and 15046 machines at Edinburgh and Glasgow, IBM 370/360 machines at Newcastle and Cambridge and a CDC 7600 at Manchester.

Candidates should have considerable experience of computer systems, preferably as Staff Leader, or Chief Programmer, and some management experience would be an advantage. Experience of one or more of the locally installed systems would also be an advantage (but not essential).

Appointments will be on a fixed term of 3 years, with a salary scale for the post of Assistant Computer Operations Manager of £4,491 to £5,225 (under review).

Further details and application forms may be obtained from The Registrar, The University of Strathclyde, Glasgow G4 0NU. Closing date: 14th February 1979.

Applications from and replies to be sent to: The Registrar, The University of Strathclyde, Glasgow G4 0NU.

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Applicants should be able to program in at least two languages, FORTRAN, COBOL, BASIC, or ALGOL and have experience in dealing with people.

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Further details and form of application available from the Assistant Director and Chief Administrative Officer, Trent Polytechnic, Burton Street, Nottingham. Closing date: 8th February 1979.

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Salary to £6200 plus up to 15% bonus.
We require experienced systems support programmers to assume responsibility for supporting, enhancing and controlling our production systems. The major programming language is PL/I, but we would consider people experienced in other languages for re-training. A knowledge of banking systems, especially in the areas of Facilities and Commercial Loans, will be a distinct advantage.

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We require an experienced systems analyst, preferably with some banking knowledge, who, depending on the qualifications of the selected candidate, will work either on the development of new banking systems or on reviewing the quality and adherence to standards of these systems.

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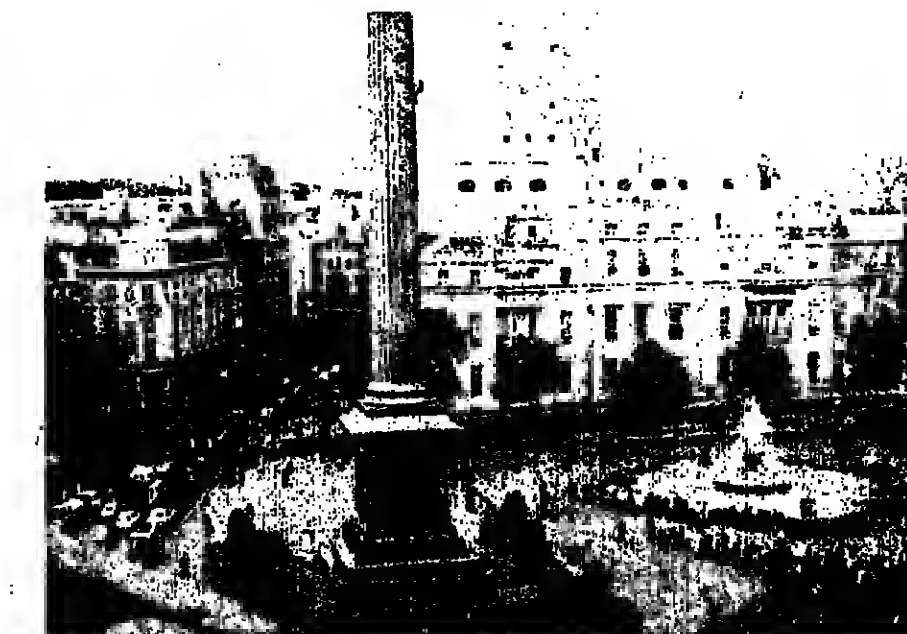
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KUWAIT UNIVERSITY**

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KUWAIT
STATE OF KUWAIT

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SHEPRA GRAPHICS, a growing company with a big future in the Graphic Arts Industry, require Field Service Engineers to install and service computerised phototypesetting systems throughout the UK.

A Company car is provided and there will be opportunity for overseas travel. Applicants should have experience of computer controlled systems, floppy or rigid disks, visual display terminals and at home with basic machine languages and software diagnostic facilities. The position will be based from our office in SLOUGH.

Apply in writing or phone SLOUGH 38779/0

Bob Allen - Service Manager
Shepra Graphics Limited
283 Farnham Road, SLOUGH,
Berks SL2 1HA

COMPUTER PERSONNEL APPOINTMENTS LTD.

Core Specialists and Consultants
**D.P. MANAGERS, SYSTEMS ANALYSTS,
PROGRAMMERS AND
OPERATORS**

50 Midlands Northern Counties and Scotland
For application forms apply to:
65 New Street, Birmingham B2 4DU, 01-225 5572

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(TURN-KEY MINI COMPUTER SYSTEMS)

SALES TERRITORIES
MIDLANDS & SURROUNDING
COUNTIES

ON QUOTA EARNINGS
£13,000 P.A. +
PLUS COMPANY CAR

Our Clients based in the West Midlands, are a fast growing and well respected supplier of turn-key mini computer systems with a substantial and impressive Client base.

The Company market excellent products in hardware and application package terms, coupled with good technical support resources.

Candidates should have a proven sales record within the mini computer sales field, a sound business understanding and the motivation and determination to succeed.

In return the Company offers a stimulating working environment amongst professionals, realistic and achievable quotas and genuine long term career prospects.

For further details and an immediate confidential interview contact:

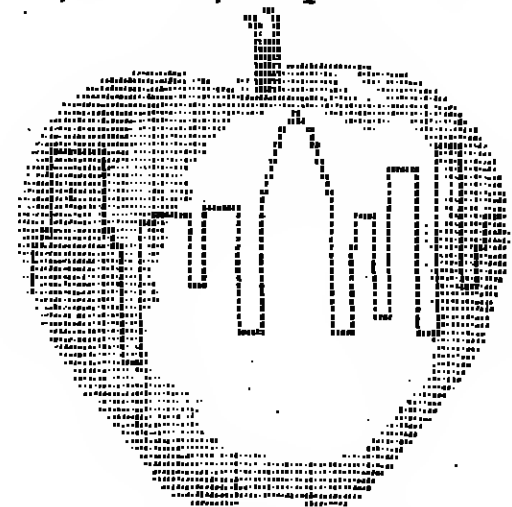
RICHARD CHAMPION ON: 021-238 3781 (24 HOUR ANSWERING SERVICE)
OR HAGLEY 4166 (EVENINGS & WEEKENDS)

SPECIALIST COMPUTER RECRUITMENT LIMITED

BIRMINGHAM 021-236 3781
Freeport, Equity and Law House,
35-37 Great Charles Street Queensway, Birmingham B3 2BR
MANCHESTER 061-833 0427
Freeport, Blackfriars House, The Parsonage, Manchester M3 8BB
LONDON 01-933 0671
Freeport 12, 3 Mandeville Place,
Wigmore Street, London W1M 6LS

Computing
Services
Association

NEW YORK
£8,000-£13,000 per annum



New York. The Big Apple. Ripe with opportunities for people in the computer industry. Right now, offering unrivalled experience in the most sophisticated business and financial environment in the world.

Our client, Computer Technicians Incorporated - Systems Division, a U.S. based consulting firm, is looking for Programmers and Systems Personnel to join a major U.S. bank, located in the Wall Street area of New York City.

Candidates for these permanent positions must have a knowledge of IBM and/or NCR systems. Vacancies exist for:

PROGRAMMERS
with a minimum of 3 years' experience.
PROGRAMMER ANALYSTS
with a minimum of 3 years' experience.
SYSTEMS ANALYSTS/PROGRAMMERS
SENIOR SYSTEMS ANALYSTS

If you're tempted, simply telephone 01-937 6241 to arrange an interview, or apply in writing, with a full curriculum vitae to:



P.O. Box 834, Wokingham,
Berkshire, RG40 3EX

SYSTEMS ANALYSTS PROGRAMMERS

Due to the continuing expansion within the Systems Department, we have a number of vacancies for Systems Analysts/Programmers for the systems and programming area, and the software and application support sections. The department currently operates:

ICL 1908A under G3
ICL 2880 under VME/8
(Using mainly COBOL for
commercial applications)

Candidates for the above positions should preferably be fully experienced, but we may be willing to train in some instances. Provided academic qualification is to HND/degree standard.

Those are responsible positions offering attractive salaries based on experience. In addition the Corporation offers a Pension and Life Assurance Scheme, Sports and Social facilities and excellent career facilities.

Please write or telephone for an application form to:

Employment Officer
BRITISH AEROSPACE AIRCRAFT GROUP
Greengate, Middleton
MANCHESTER M24 1BA
Telephone: 081-881 2020 extension 387

The Polytechnic of North London

HEAD OF COMPUTER UNIT

Applications are invited for the above post which involves responsibility for all functions of the Computer Unit including operation, systems programming, data preparation and advisory services throughout the Polytechnic.

The Computer Unit has a DECsystem-10 computer with a large range of peripherals providing a multi-access and batch processing service and has a staff of about 30.

Applicants should be graduates with considerable experience in the hardware and software fields, some of which should be at management level.

Salary Scale: £7827-£8856 (including London Allowances).

Application form and further details from Educational Officer,
Polytechnic of North London, Holloway Road, London N7 8DB.

Closing date: 15th February, 1979.

Lowndes-Ajax expansion creates rewarding sales opportunities

CROYDON

Mailing & Fulfilment System

This position has been created to capitalize on the company's experience in the above field, by selling a sophisticated mailing system entailing a degree of individual tailoring to large user requirements, in order to gain a major share of this market.

The successful applicant may currently be working as a project leader/systems analyst although sales experience would be an asset. Each system could be based on DBMS and RJE so knowledge of these techniques will be useful.

Computer Output Microfilm

The purpose of this post is to maintain and further increase the current rate of market penetration. An experienced sales executive with a sound knowledge of COM and Microfilm techniques, together with an on-going interest in this expanding sector of the computer market, is required to sell the service to a wide variety of users.

The successful applicant will be joining an established COM Bureau, already servicing a large number of satisfied customers. He will be backed by an experienced and dedicated support team using advanced equipment.

Personnel Information Systems

The company, already considerably experienced in DBMS related systems and all types of telecommunications, is developing a new specialist service aimed at providing an interactive system designed around the System 2000 DBMS operating on large IBM 370's.

This development requires a sales executive with experience of DBMS and/or personnel-related systems, preferably in a sales capacity or as a project leader, to assist the Company's advance into Custom-built database applications such as the Personnel Information systems market.

Applications
Payroll and Personnel
Ledgers and Fixed Assets
Custom-built Systems
Mailing
Manufacturing Systems
Financial and Insurance Systems

WARRINGTON

Financial Accounting Systems

A knowledge of Payroll and Ledgers with ability to negotiate at a senior level, is required for this post. A background in E.D.P., preferably with IBM mainframes is desirable. An interest in Database and remote computing would be an advantage. The successful applicant will be required to use initiative and to work without close supervision.

Remuneration

All these positions carry a basic salary of over £6,000 and commission package producing earnings of £8,500 based on very realistic quotas. Rewards considerably in excess of £10,000 are currently being earned as a result of above quota performances.

Job Structure

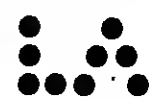
Successful applicants will join a sales team structured on an hierarchical basis offering excellent opportunities for advancement to leadership status.

Fringe Benefits

Each post includes a company car plus other exceptional benefits such as mortgage subsidy, B.U.P.A., pension scheme and membership of an excellent sports and social club.

Applicants for these posts should in the first instance write with full C.V., or telephone Mrs. Liz. Hilton, Lowndes-Ajax Computer Service Limited, Milton House, Milton Road, Croydon, CR9 2XG. Tel: 01-689 2244.

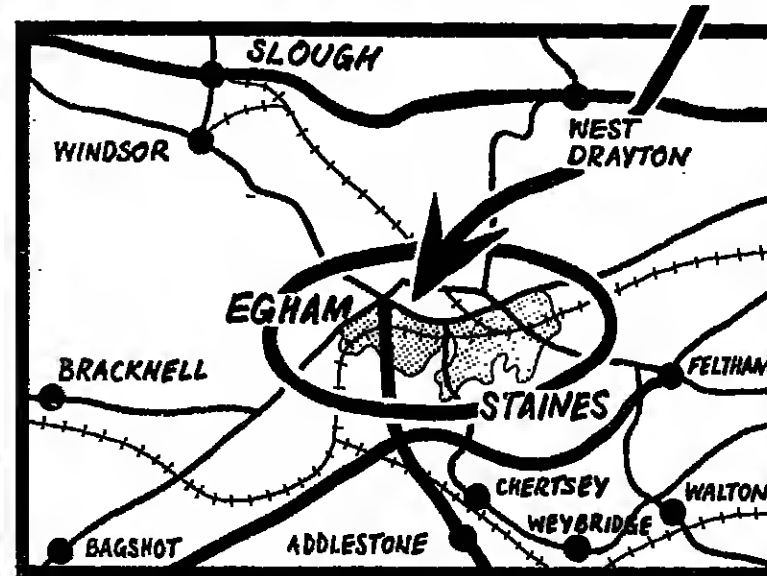
Lowndes-Ajax Computer Service



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Data Preparation
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Interactive Computing
System 2000 DBMS
Simplen Corporate Modelling

LIKE TO WORK HERE?



If Staines/Egham is an easy place for you to get to, you could well be interested in one of the current openings with our clients - a busy, lively Company engaged in the manufacture and assembly of electronic components. With the support of a new top management team, a number of accounting and manufacturing systems are being developed, using ICL 2804 and on-line facilities in the administrative offices. The installation is conveniently situated close to shops, banks, etc., and relocation assistance will be given where applicable. Our clients are committed to the development of skills by a planned schedule of training.

SENIOR ANALYSTS £6500-£8000

These posts will interest practical, well-organised people who are happy working in a manufacturing environment. There are opportunities to take project responsibility, including team leadership, in the fields of design and production. (Ref. 972)

O&M ANALYST C. £6500

This is a new appointment, and the successful candidate (who will be the first O&M practitioner in the Company) will have plenty of scope to design and implement improved methods. A sound O&M background is required, with some supervisory experience, since there is the potential to build a small team in the near future. (Ref. 978)

PROGRAMMER C. £5500

This opening will interest a practical, effective programmer, with COBOL and/or RPG II experience (preferably ICL). A member of a small team in addition to being involved in new applications (including on-line systems) you will have the opportunity to further your technical experience. (Ref. 977)

Please ring us for a confidential talk, quoting the appropriate reference, or leave a message on our answering machine after hours and we'll contact you. Initial interviews will be held either at our offices or in your home area.

EDP SYSTEMS 01.637 5796
52-53 Margaret St. London W1N 7FF

IBM Programming Experience?

Programmer/ Analyst

ICI's Pharmaceuticals Division is looking for a young man or woman with at least 2 years' programming experience using IBM 360/370.

Comprising analysts, programmers and a data control function, the section is responsible for systems analysis, design and programming and production of divisional management accounting information. As a programmer/analyst you would be responsible both for development work and the operation and maintenance of current systems, with good scope for career development.

Aged around 22/32 with a university degree or equivalent, you will need a good knowledge of PL/I. Experience with on-line systems would be an advantage.

The Division is situated in a delightful and easily accessible part of the Cheshire countryside. A remuneration package of around £6,000 would be offered to the successful candidate and other benefits, including relocation expenses, sports and social clubs are excellent.

For information and an application form, ring Kate Hudson on Alderley Edge 582828 or write to her at:



Personnel Department,
ICI Ltd.,
Pharmaceuticals Division,
Alderley House,
Alderley Park,
Macclesfield, Cheshire.

Recruitment



in Informatics

Burroughs Programmers & Analysts Belgium and Netherlands

Salaries: £12K-£15K

An important Financial and Banking Institution based in the Benelux and having one installation in the Netherlands and its Head-Quarters in Belgium requires PROGRAMMERS and ANALYSTS to join its Development Teams in Spring, 1979. Both installations run BURROUGHS mainframe hardware and consequently it is a pre-requisite to offer current expertise on that company's medium and large scale equipment either in a programming or Analytical/Designing capacity. These opportunities represent an outstanding opportunity

for those who have had exposure to Financial, Commercial and Banking applications. You will be offered a permanent career position at one of the two installations and be expected to integrate into both the work and social fabric of the local community. To assist you, generous relocation and accommodation allowances will be paid, language tuition courses are available to all employees. Whilst we will conduct initial interviews, you will be required to spend one full day at the company's Head-Quarters - of course at its expense for further interview and selection.

Coral 66 Programmers Hertfordshire or Central London

Salary: £6K-£8.5K

One of the U.K.'s foremost Hardware Design and Software Supply Companies urgently requires additional team members for one of its prestige projects. Whilst previous hardware experience is not essential it is essential that applicants are fully conversant with CORAL 66 and preferably either Mini/Micro Assembler or machine language FORTRAN. Those who have experience in the development of systems and software, compilers and operating systems are of special importance, whilst for other

positions an in-depth knowledge of emulators, IBM HASP/2780 or ICL 7020 would be considered as advantageous. The scope of the projects is both broad and demanding and certainly well in keeping with the prestige of this client. You will play an important role in project development and will be given every opportunity to enhance your technical expertise. Fringe benefits are well above average covering health and medical benefits, restaurant facilities and if appropriate relocation expenses.

Snr/Jnr Mini/Micro Specialists Denmark

Salaries: £9K-£15K

Our client is a major International Systems and Software Development Group recognised as Market Leaders in its field. Owing to continued expansion in a wide variety of applications areas including Data Communications, Message Switching, Computer Networking and Mini Computer Software, a significant number of experienced permanent personnel are urgently required.

Emphasis will be placed on technical achievement and in-depth experience in the areas of activity outlined above. Whilst a degree or equivalent qualification in either Computer Science or Mathematics is desirable, significant relevant experience will be considered in lieu.

Of course a solid Assembler background within a Mini computer or Microprocessor environment. Project locations are primarily in Copenhagen and suburbs although candidates can expect to work should they so desire in the Netherlands, Germany or Sweden. Of prime importance is demonstrable enthusiasm to relocate to the Netherlands for an extended period. Every assistance will be given in relocation, including the cost of removal of all personal effects, initial accommodation expenses and a resettlement advance. Interviews will be held as soon as applications are received and offers of employment will be made within 10 days of interview.

Database and TP Specialists Belgium and Thames Valley

Salaries: Europe c £16K UK c £10K

One of the World's foremost Software Suppliers of U.S. origin has requested Logistix to identify top calibre T.P. and/or Database Analysts, Designers and Software/Applications Programmers up to and beyond Team Leader level for permanent career based positions in the West and North of London or immediately at the company's European Head-Quarters in Belgium.

Suitable applicants must have current on-line (T.P.) or Database applications or systems programming experience using PL/I, COBOL or BAL. It is anticipated that candidates will have worked with on-line or D.B. applications for 2 years or longer. Applications cover on-line enquiry systems, sales

ordering, stock/inventory control, budgeting and forecasting etc. The scope of projects and the prestige of working with this acclaimed Market Leader will be certain to appeal to the most demanding career minded individuals. The high salaries reflect the prominence which our client places in the acquisition of these key personnel who are certain to rise rapidly to Consultancy or Management levels. Interviews will be held either in our London offices or alternatively at the client's Regional Head-Quarters in U.K. whilst for expatriates arrangements for an interview in Belgium can be made.

Systems Development (Pre and Post Sales) Central London and Thames Valley

Salary to £10K + car

Two divisions of a prestige Systems and Software Development Group are seeking additional personnel at all levels of experience. Generally speaking, applicants should have experience in one or more of the following application areas: COMMERCIAL - equipment selection and implementation, organisational reviews and systems development plans. TECHNICAL - compiler design, operating systems and communications software, in both divisions you

will be given opportunities to act in a pre or post sales environment. The company offers an outstanding portfolio of company benefits including a minimum of 4 weeks holiday allowance, Group medical insurance and life assurance are already in operation whilst more senior staff are eligible for an annual bonus (currently assessed at 10% of salary). Full removal assistance is available where appropriate. Local interviews in Greater Manchester, Central London and Reading will be arranged to suit requirements.

Logistix, Freeport 32, London W1E 3YZ

360 Oxford St.
London W1N 9HA

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01-491 4636



Telex: 28800

NEW ZEALAND

The Computer Services Division of the New Zealand State Services Commission has the following vacancies for EOP staff experienced in developing and maintaining major systems, large scale equipment and data communications networks.

SENIOR SYSTEMS PROGRAMMERS / SYSTEMS PROGRAMMERS

(Salaries up to NZ \$14,500)

SHIFT SUPERVISORS

(Salaries up to NZ \$13,000)

SENIOR OPERATORS

(Salaries up to NZ \$11,500)

Positions are available at:

Wellington — Both the Police and Cumberland Computer Centres are situated in central Wellington.

The Police Centre operates a dual Burroughs 84700 supporting a nationwide network at Howick, Pakarua terminals.

The Cumberland Centre operates an IBM 188 running under APL/VS. Many networks are under development using both TSO and IMS. A demanding environment exists with a large user base across a variety of Government departments.

Upper Hutt — The Transhant Computer Centre is situated 20 miles north of Wellington and operates an ICL 2980 supporting a network of smaller computers and terminals.

Wanganui — (West Coast North Island) — if you feel like a change from the large city environment, this centre offers a large transaction processing system operating UNIVAC 1110 (3 x 2) under EXEC UDS with TIF, OMS and CMS.

Assistance will be provided to staff recruited in U.K. to move their family and household effects to New Zealand.

The Systems Manager of the Division's Cumberland Computer Centre, Mr Roger Myers, will be conducting interviews in London on 15th Feb 1979 in conjunction with a New Zealand Immigration Office.

Applications and other information can be obtained from The Chief Migration Officer, New Zealand House, Haymarket, London SW1Y 4TD. You should quote reference Jan. 2/338/8.

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The 'footslogging' search for a new job is over!

Thanks to 'Computerjob' — work opportunities are as close to you as your phone!

Simply ring the number below, supply our receptionist with a few relevant details — type of work required, salary and area — together with any qualifications or previous experience. These will then be immediately fed into our computer and crosschecked with 1000's of jobs registered by prospective employers.

Within seconds, depending on availability, we will give you up to 6 suitable vacancies over the phone.

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Computerjob

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LANCHESTER POLYTECHNIC

Coventry

COMPUTER CENTRE

Due to expansion of the Computer Centre and in order to prepare for the replacement of the current ICL 19035 computer there are vacancies for:

3 Chief Programmers

£5727-£8342 or £6060-£6702 or £6513-£7230

THE JOB: — These three posts are the most senior programming appointments in the Computer Centre and between them, they will be responsible for the work of over a dozen programmers.

REQUIRED: — At least five years post graduate experience with demonstrable achievements including project management and to have high educational and professional qualifications.

For application form and job specification please apply in writing enclosing a foolscap stamped and addressed envelope to the Personnel Officer, Lanchester Polytechnic, Priory Street, Coventry CV1 9FB returnable by 9th February, 1979.

ANALYST PROGRAMMERS

MANCHESTER

£5,000 to £6,500 +

THE JOB

- Member in a team developing commercial and communication systems for microprocessors
- Opportunities for travel to Europe, Australia and America

THE QUALIFICATIONS

- 2 years' in commercial small systems
- Some Assembly preferred
- Current Driving Licence an advantage

Please send C.V. or phone Oliver Cahn.

FIETH

Statham House, Talbot Road, Stratford, MANCHESTER M32 0FP
Tel: 061-872 8671
Telex: 667518

SOFTWARE SERVICES LTD.

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All classified copy should reach our offices no later than 5.30 p.m. on the Monday preceding Thursday's publication. If complete artwork is supplied 12 noon on a Tuesday.

Ring David Abbey for further details on 01-261 8016.

RIVA BOLTON

RIVA TURNKEY COMPUTER SYSTEMS LIMITED

SENIOR PROGRAMMERS / ANALYSTS to £7000

PROGRAMMERS to £5000

(Plus relocation assistance)

Riva is a rapidly expanding Systems House specialising in all types of microcomputer systems, from large COBOL/Database commercial systems to mini/micro interface construction. We would like to meet programmers and analysts with a professional approach who want to get to the forefront of systems development.

Minimum requirement — 1 year outline experience. Languages — COBOL, FORTRAN, BASIC, Assembly. Location — BOLTON. Within easy reach of most of Manchester and South Lancashire.

Please ring: MARION PEARSON on BOLTON (0204) 384112 or write to: RIVA TURNKEY COMPUTER SYSTEMS LTD, Caroline House, 128 Bradshawgate, Bolton BL2 1BJ

OPERATORS

IBM OS 2 yrs exp. experience required plus good JCL knowledge for the 19035 £5800 London

IBM OS Shift 1/2/3 with a minimum of 2 yrs. experience for the computer £5700 For shift to suit purpose

IBM DOS This is a new company in Surrey requires operators with 1 yr experience £4000

IBM DOS Shift 1/2/3 required for the Days only W London etc. Good time prospects £5000

IBM SYS 3 Financial institution requires an operator with 6 months' experience £4200

ICL 2900 Operator required for company moving to Bucks 1 to 2 yrs 19000 £4700 2900 exp. Good prospects

ICL 2900 Company in W London requires operators with 12-18 months experience some shift required Good prospects £4300

ICL 1900 Operator with 2 yrs. exp. experience required for a site in Essex 2 day only £4300

PDP DEC 10 Minimum of 6 months' experience required for this C London site £4300+

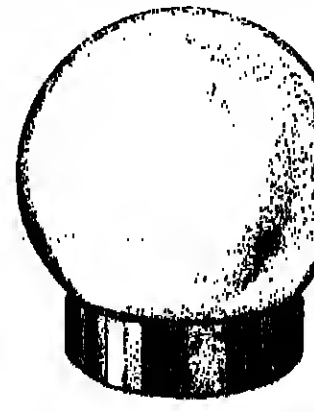
UNIVAC Operator/Shift Operator required for this W London company. Excellent prospects £4500

DATA CONTROLLERS

All areas £3000-£5000

TARGA COMPUTER DIVISION

3 LIVENPOOL STREET LONDON, EC2M 7BU 01-283 2751



A New Year and Resolutions

Make a Resolution to come to Square One's Open Evening

If you are a Programmer or an Analyst with a sound commercial background and are looking for a more challenging career, make a note to your diary to ring along and have a beer and a chat about what we can offer someone like you.

Monday, 29th January is the date, 4.30 pm-8 pm in the time and 110 Regent Street, London W1.

Don't miss it, Square One and a great company to work with.

one
Open Evening
SQUARE ONE

Norfolk County Council

Norwich City College of Further & Higher Education

LECTURER I in COMPUTING & D.P.

also

LECTURER I in MATHEMATICS

Two graduates required from 1st April for general teaching duties up to HNC/HND level but specialist knowledge in particular field would be an added advantage.

Post MCS1: Computing and Data Processing (including Post MCS2: Mathematics). Ideally with some experience of computing at a lower level.

Salary will be in accordance with the Norfolk Further Education Report — Lecturer 1 £2,182-£2,513.

Application forms and further particulars may be obtained by sending a large stamped addressed envelope to the Administrative Officer, Norwich City College of Further & Higher Education, Ipswich Road, Norwich, NR1 1JF. Completed forms should be returned within 14 days of the appearance of this advertisement.

PROGRAMMERS MANCHESTER

THE DEPARTMENT

The Computer Installation is situated in Stratford in modern office accommodation, housing an ICL 1902T, 64K Machine with 4 EDS 60's, 4 MT and communications equipment.

The current work of the Data Processing Department includes a wide range of commercial, financial and statistical applications. The on-line interrogation system is being enhanced and other new projects are planned.

THE PERSON

We are looking for an experienced Programmer who has been responsible for at least one system from feasibility study through to implementation.

Candidates must be familiar with Disc Processing and preferably ICL Software.

The person appointed must be able to communicate effectively with non-technical staff and senior management. They must also be able to handle the detail problems encountered in the writing of program specifications and the interactions between systems.

THE REWARDS

The starting salary is £3873 per annum rising to £4989 per annum (currently under review). There are the usual benefits of working for a progressive organisation, including 5 weeks holiday plus statutory holidays and luncheon vouchers.

Please write for an application form quoting reference DP/9 to the Personnel Manager, Distributive Industry Training Board, MacLaren House, Talbot Road, Stratford, Manchester M32 0FP within the next SEVEN days.

SYSTEMS ANALYST

This new position is definitely for a person who is "going places"

We are looking for a well-educated person with at least three years' experience in a data processing environment. He/she should have a good knowledge of the design of systems and interface with users and the ability to read and comprehend complex program specifications. The successful candidate should also have the ability to communicate at all levels.

This appointment offers the opportunity to help develop existing systems and to introduce new ones and to become involved in worldwide information dissemination and relief.

Promotion to senior management could come rapidly for the right candidate and immediate rewards are high with benefits associated with a progressive company.

Please write with abridged curriculum vitae to:

A. M. Brooks
Data Processing Director
Derwent Publications Limited
Rochdale House
128 Theobalds Road
London WC1X 8BP

REAL-TIME PROGRAMMER MINI/MICRO SYSTEMS

If you have

- at least 12 months' experience on PDP8 and/or PDP11, or
- 12 months' experience on MPUs, preferably Motorola 6800
- the ability and initiative to work unsupervised
- a desire to travel.

We have vacancies which will interest you. Work involves design, programming and commissioning of real-time mini/micro systems. New system development.

Training will also be given on IBM Series 1. Work involves 3-4 week assignments abroad. London based.

Apply with c.v. to Box 1001, Computer Weekly.

Computer Operators & Trainee Computer Operators

The Central Electricity Generating Board has a number of vacancies for Computer Operators and Trainee Computer Operators at its Headquarters Computing Centre located at 85 Park Street, London SE1 9DY.

The computing configuration consists of:

- 1 — IBM System 370 Model 168K operating under MVT/ASP
- 1 — IBM System 370 Model 188/433 operating under MVS/SES
- 1 — IBM System 3032 will shortly be installed.

Both Model 168's have access to magnetic disc and tape sub-systems and other peripheral devices. The installation also supports a large data transmission network of remote processors and terminals. The central computers are operational seven days a week and are manned by 5 shifts of operating staff.

Applicants for the post of Computer Operator must be over 18 years of age and should possess GCE 'O' levels or equivalent qualifications, together with at least one year's operating experience preferably in a large computer installation. Consideration will also be given to those without experience for appointment as a Trainee Computer Operator.

The salaries for these positions will be dependent upon experience and will be within one of the following ranges:

COMPUTER OPERATOR
£3721 — £4987 per annum inclusive
TRAINEE COMPUTER OPERATOR
£2820 — £4081 per annum inclusive

Applications stating full relevant details and present salary to the Group Personnel Officer, C.E.G.B., Sudbury House, 15 Newgate Street, London EC1A 7AU, by 1 February 1979. Only R/L CV/9

CENTRAL ELECTRICITY GENERATING BOARD, HEADQUARTERS

SOFTWARE SUPPORT ANALYST/PROGRAMMER

CalComp is acknowledged as the world's leader in computer graphics — one of the most rapidly developing areas in the computer industry.

We already offer the widest range of graphics products available from any one source in Britain, and with our constant product development programme, we most definitely need an additional experienced Software Support Analyst/Programmer.

THE JOB

Based in our modern offices in Brixton but covering the whole of the UK, this job involves advising CalComp graphic systems users on the wide range of software available and assisting with the on-site installation of software. It also involves taking an active part in the marketing of our software and, particularly in the organisation of seminars, etc.

THE PERSON

The person we are looking for will be aged around 24-34 with at least 2-3 years experience of FORTRAN and an Assembly language.

He (or she) should have a broad knowledge of the computer industry and be used to working in a competitive commercial environment. An understanding of CAD and/or computer graphics will be a distinct advantage.

THE REWARDS

The rewards will be attractive for the right person, with a good basic salary, bonus, a full range of fringe benefits including BUPA and a company car.

To apply, please write to, or ring:

Don Crowle, CalComp Limited, Cory House, The Ring, Brecknell, Berkshire. Tel. (0344) 50211

CALCOMP

SENIOR COMPUTER OPERATOR

To join our rapidly expanding Computer Department. You must have experience of ICL 2903/2904 or 1900. At present we are using a large 2804 machine with sophisticated network attached.

Salary from £3120-£4000 including shift allowance.

This permanent vacancy attracts fringe benefits, which include concessionary travel and LVS.

Applications in writing to Mr. Weaver, Assistant Employment Manager.

TOWNSEND THORSEN

The European Forces
CAMDEN CRESCENT, DOWRY, KENT

CUSTOMER ENGINEERS & SENIOR CUSTOMER ENGINEERS

£5,000 to £8,000 + Car

Versatec, part of the Xerox Group, is a California based company supplying high technology electronic computer peripherals for scientific and commercial applications. Continued success requires further expansion of our Engineering Department, we are, therefore, looking for engineers to complement our existing team.

Initially, training will be in the UK, but applicants should be prepared to travel in Europe and to our manufacturing facilities in the USA. The jobs, which involve both the installation and maintenance of modern electronic graphic sub-systems in the South West and South East, are both challenging and rewarding. Applicants should be motivated, self-motivated, and capable of working from home or a local office with the minimum of supervision.

Salaries are above average. Company cars are provided, and an incentive bonus and HBA membership are arranged. The benefits offered. Assistance with relocation will be provided if necessary.

Write to David Garland for more details.

VERSATEC

A XEROX COMPANY

Versatec, 3715 London Road, Newbury, Berkshire. Telephone: Newbury (06-35) 42421

Systems Group Head

An experienced SYSTEMS PROGRAMMER is sought to take charge of the Systems Group which maintains and develops nationally operating systems, data and terminal communications systems and the Group's computer networks.

The Centre is currently operating a range of systems and with the points of entry to the system are the following: 1. The mainframe computer, 2. The terminal computer, 3. The data base, 4. The network, 5. The user interface, 6. The system security, 7. The system performance, 8. The system documentation, 9. The system training, 10. The system support.

The successful candidate will have a minimum of 5 years' experience in the design, development, testing and commissioning of systems, and will be responsible for the overall management of the Systems Group. He/she should have a good knowledge of the computer industry and be used to working in a competitive commercial environment. An understanding of CAD and/or computer graphics will be a distinct advantage.

Details and applications forms, in the enclosed form to the Personnel Officer, Chelsea College Avenue, Finsbury Park, London N4 4JL. Informal enquiries to the Computing Centre can be obtained by appointment with the Secretary of the Computing Centre. Telephone 736 1244 (Finsbury Broadway).

UNIVERSITY OF ESSEX

Senior Lecturer / Reader and Lecturers

In the Department of Electrical Engineering Science

Applications are invited for the following posts in the above Department, for appointment from 1 October 1979.

One post of Senior Lecturer/Reader (salary scale £7,506-£9,263, under review). Candidates should have a relevant first degree and preferably a higher degree, together with experience in some branch of computer engineering or application. (Reference AG/84).

Two posts of Lecturer (salary scale £3,863-£7,754, under review). Candidates should have a relevant degree and experience in some branch of modern electronics or telecommunications. Particular vacancies exist for those with experience in: electro-optics or optical transmission, or television systems. (Reference AG/82).

Applications (in two copies), quoting the appropriate reference and including a curriculum vitae and the names and addresses of two referees (three for the senior post), should reach the Registrar (AO), University of Essex, Wivenhoe Park, Colchester CO4 3SQ, from whom further particulars may be obtained, by February 22, 1979.

SOUTH GLAMORGAN HEALTH AUTHORITY (T)

SENIOR ASSISTANT

COMPUTER UNIT

Salary: £4,421-£5,328 per annum

New vacancies in the N.H.S. (Health) system of the South Glamorgan Health Authority are invited for the post of Senior Assistant in the Management Services Department of the Authority. Applicants should possess a sound knowledge of commercial systems, as well as a sound knowledge of Paltran. Experience with PDP 11 systems would be an advantage.

Informal enquiries to D. M. Brown — Tel. 0222 30661

Application forms and job description from: Area Personnel Department, 14th Floor, Park Avenue House, Greyfriars Road, Cardiff, Tel. 0222 204724. Closing Date: 12th February, 1979.